

Technical Report 1236

**Modeling the Direct and Indirect Determinants of
Different Types of Individual Job Performance**

**Jeff W. Johnson, Emily E. Duehr, Sarah A. Hezlett,
John P. Muros, and Kerri L. Ferstl**
Personnel Decisions Research Institutes, Inc.

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MODELING THE DIRECT AND INDIRECT DETERMINANTS OF DIFFERENT TYPES OF INDIVIDUAL JOB PERFORMANCE

EXECUTIVE SUMMARY

Research Requirement:

This report summarizes research carried out pursuant to Contract # W74V8H-05-K-0005 of the United States Army Research Institute for the Behavioral and Social Sciences (ARI), under the auspices of its Basic Research Unit. Organizational citizenship performance and adaptive performance are important components of the Army junior commissioned officer job performance construct domain. Despite the importance of these constructs, there has been very little research studying them in a military setting. There also is no well-established model of the process by which individual difference variables predict citizenship performance or adaptive performance, in either a military or a civilian context. The purpose of this research was to test a model of the process through which individual difference variables work to influence performance on specific citizenship and adaptive performance dimensions relevant to the military.

Procedure:

In order to test this model, we assembled and developed a battery of instruments that are construct-valid measures of each component of the model. All measures created for this project were based on input from ROTC cadets and midshipmen. To measure task, citizenship, and adaptive performance, we created a multisource performance rating instrument measuring performance on five different dimensions. We created a past behavior record to measure skill and a situational judgment test to measure knowledge, both of which are relevant to five performance dimensions. We also created (a) a unique self-report measure of work habits; (b) a motives scale assessing attitudes, values, and preferences that predict performance; (c) a motivation scale measuring self-efficacy, expectancy, and goal commitment; and (d) a scale measuring experience. In addition, we created a self-regulation scale to measure the extent to which respondents were able to focus on performing the behaviors they indicated they intended to perform, and assembled a battery of existing instruments to measure cognitive ability, personality, experience, social insight, and action control.

The predictor battery was administered to 155 ROTC cadets and midshipmen in the Fall of 2006. Criterion administration took place during March and April of 2007, allowing us to assess the extent to which cadets and midshipmen performed the behaviors they indicated they were motivated to perform. The self-regulation scale was administered four times during this period, allowing us to track how well each cadet/midshipman was able to maintain focus on performing these behaviors. Each cadet/midshipman was rated by one to five peers. The data were analyzed using structural equation modeling to test the Johnson (2003) model, as well as several ancillary hypotheses.

Findings:

The data summarized in this report show that modified versions of the general Johnson (2003) model were found to describe the process by which predictor variables influence performance. Different models were necessary to describe the process for task, citizenship, and adaptive performance. The strongest support for the model came from the task performance dimension. For this dimension, knowledge, skill, cognitive choice aspects of motivation, and self-regulation were all direct determinants of performance, and each of these determinants was predicted by different combinations of personality traits, experience, and motives. Motives such as job satisfaction and affective commitment were related to performance only through the mediating influence of expectancies and goal commitment. A similar model was supported for the adaptive performance dimension. The differences were that only some of the hypothesized direct determinants had significant paths to performance, and one personality trait had a direct influence on performance.

This model did not generalize to the citizenship performance dimensions, although a similar model was found for each different dimension of citizenship performance. In this model, motives were a direct determinant of performance and expectancies were not. Knowledge, skill, and self-regulation were direct determinants, but never all at once and the one that was a determinant depended on the citizenship dimension of interest. There were two cases in which a hypothesized indirect performance determinant had a direct influence on performance.

Utilization and Dissemination of Findings:

Several potential applications of this basic research were described. First, this model contributes to a better understanding of the relationships between predictors, mediators, and job performance criteria, and could be used to choose appropriate predictors for whatever criterion construct is of interest for a particular Army job. This model of the influence of individual differences on job performance can not only facilitate selection, classification, and training of junior commissioned Army officers, but also adds significantly to the evolving understanding of job performance. The Army can use this model to identify interventions that will have the greatest impact on areas of performance that are deficient in certain officers. This tool also would be effective in identifying training and/or development needs. Given a criterion construct on which an individual's performance is in need of improvement, this model can help to identify the determinants of performance on that construct. The products developed for this project also may be useful as self-development, training, selection, or feedback tools.

MODELING THE DIRECT AND INDIRECT DETERMINANTS OF DIFFERENT TYPES OF INDIVIDUAL JOB PERFORMANCE

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Background

To make sense of the host of potential job performance determinants (i.e., predictors of performance) from which to choose when doing performance prediction research, a model of the process by which specific determinants influence performance on specific dimensions is necessary. Research on models of performance determinants has been conducted in both military and civilian contexts, but has been primarily focused on the relationship between cognitive ability and task performance (Borman, White, Pulakos, & Oppler, 1991; Hunter, 1983; Lance & Bennett, 2000; Schmidt, Hunter, & Outerbridge, 1986). Task performance consists of activities that (a) directly transform raw materials into the goods and services produced by the organization, or (b) service and maintain the technical core by replenishing supplies; distributing products; and providing planning, coordination, supervising, and staff functions that allow for efficient functioning of the organization (Borman & Motowidlo, 1993).

Citizenship Performance

Task performance can be distinguished from contextual performance, which is defined as activities that support the broader environment in which the technical core must function, including behaviors such as volunteering for tasks not formally part of the job, demonstrating effort, helping and cooperating with others, following organizational rules and procedures, and supporting organizational objectives (Borman & Motowidlo, 1993). Contextual performance, organizational citizenship behavior, and related concepts are often referred to under the general label *citizenship performance* (Borman & Penner, 2001; Coleman & Borman, 2000). Confirmatory factor analyses have provided evidence for the distinction between task and citizenship performance (Conway, 1996; Johnson, 2001). Further, research has shown that both task performance and citizenship performance are taken into consideration when supervisors evaluate others' performance (Conway, 1999; Johnson, 2001; Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996). Some research also shows that task performance is better predicted by ability and experience, and citizenship performance is better predicted by personality variables (Borman, Penner, Allen, & Motowidlo, 2001; Hertz & Donovan, 2000).

The dimensionality of citizenship performance is muddled, with different authors offering different numbers of dimensions with different labels (Borman & Motowidlo, 1993; LePine, Erez, & Johnson, 2002; Organ, 1988; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). In an attempt to clarify the latent structure of citizenship performance, Coleman and Borman (2000) identified 27 citizenship performance behaviors based on all proposed models and discussions presented in the literature. The behaviors were sorted by 44 industrial and organizational (IO) psychologists, and the similarity data were analyzed using factor analysis, multidimensional scaling, and cluster analysis. The authors rationally combined the results of the separate analyses into a single integrated model representing three categories of behavior. Borman, Buck, Hanson, Motowidlo, Stark, and Drasgow (2001) refined this taxonomy on the basis of a sort of approximately 2,300 examples of citizenship performance taken from 22 studies, giving the categories the following labels: (a) personal support, (b) organizational support, and (c) conscientious initiative. *Personal support* consists of behaviors benefiting individuals in the organization, and includes helping, motivating, cooperating with, and showing consideration of others. *Organizational support* consists of behaviors benefiting the organization,

and includes representing the organization favorably, showing loyalty, and complying with organizational rules and procedures. *Conscientious initiative* consists of behaviors benefiting the job or task, and includes persisting with extra effort to complete tasks, taking initiative, and engaging in self-development activities (Borman, Penner, et al., 2001).

Research in military settings showing the importance of citizenship performance to the criterion domain has mostly been limited to enlisted personnel (Borman, White, & Dorsey, 1995; Campbell, Hanson, & Oppler, 2001; Campbell, McHenry, & Wise, 1990; Motowidlo & Van Scotter, 1994). Given the importance of citizenship performance to military enlisted jobs and all types of civilian jobs, it is surprising that there is so little published research on citizenship performance in military officer jobs (two dissertations have examined citizenship performance among Army officers or West Point cadets; Grojean, 2002; Leboeuf, 1995). Geraghty and Collins (2003) noted that military officer jobs involve citizenship behaviors that are relevant to almost every job (e.g., altruism, courtesy, personal discipline), as well as supervisory citizenship behaviors such as motivating and supporting others.

The Army's mission documents (e.g., Department of the Army, 1986, cited in Bartone & Kirkland, 1991) emphasize the importance of unit cohesion to military combat readiness and the importance of sound leadership exercised by junior officers to the development of cohesion in these units. Group cohesion (i.e., the tendency for a group to stick together and remain united in the pursuit of its goals; Carron, 1982) in military units has been researched extensively. In a large-scale meta-analysis of military group cohesion research, Oliver, Harman, Hoover, Mayes, and Pandhi (1999) found positive relationships between cohesion and group performance, individual performance, job/military satisfaction, retention, well-being, and readiness; and a negative relationship between cohesion and disciplinary problems.

In Bartone and Kirkland's (1991) model of the development of excellent military units, the decisive factor differentiating cohesive, high-performance units from mediocre units is the behavior of leaders. The authors identified four critical leader characteristics that contribute to the development of excellent units at four different stages. The behaviors associated with three of these characteristics represent different aspects of citizenship performance (e.g., show concern for Soldier well-being, treat Soldiers with dignity, and share Soldiers' sense of mission). A longitudinal study of an Army medical task force found support for this position (Bartone & Adler, 1999). In that study, one of the most important correlates of task force cohesion throughout deployment was the Soldiers' perceptions that their leaders were concerned about them (an aspect of personal support).

Adaptive Performance

Task and citizenship performance have been generally accepted as separate aspects of the individual job performance domain. Because of the increasingly dynamic nature of work environments, however, adaptive performance has recently received increased attention (Campbell, 1999; Hesketh & Neal, 1999; London & Mone, 1999; Pulakos, Arad, Donovan, & Plamondon, 2000). Adaptive performance is the proficiency with which a person alters his or her behavior to meet the demands of the environment, an event, or a new situation (Pulakos et al., 2000). Hesketh and Neal (1999), Schmitt, Cortina, Ingerick, and Wiechmann (2003), and

Johnson (2003) suggested that adaptive performance is a component of the performance domain that is separate from task and citizenship performance. Pulakos et al. (2000) developed and found support for a taxonomy of adaptive performance consisting of eight dimensions. Johnson (2001, 2003) classified seven of these dimensions as either task performance, citizenship performance, or a combination of both. The dimension of dealing with uncertain and unpredictable work situations is the only component of Pulakos et al.'s taxonomy that is clearly distinct from task and citizenship performance (Johnson, 2003). Elements of this dimension include taking action when necessary without having all the facts at hand; adjusting plans, actions, or priorities to deal with changing situations; and imposing structure to provide focus in dynamic situations.

Adaptive performance is undoubtedly an important component of performance for many Army officer jobs. For example, officers and NCOs must frequently adapt to changes, including deployment in other countries, where they must provide leadership in newly formed, specialized task forces (Bartone & Adler, 1999). Pulakos et al. (2000) found that the dimension of dealing with uncertain and unpredictable work situations was among the most important dimensions to Special Forces Soldiers, combat NCOs, and military police.

Thus, there is evidence that citizenship performance and adaptive performance are important components of the Army officer job performance construct domain, just as they are in most other military and civilian jobs. However, there has been very little research studying these performance components in a military setting. There is also no well-established model of the process by which individual-difference variables predict citizenship performance or adaptive performance, in either a military or a civilian context. The purpose of this project was to test a model of the process through which individual difference variables work to influence performance on specific citizenship and adaptive performance dimensions relevant to officers in the U.S. Army.

Models of Individual Differences in Job Performance

Several models of how individual differences influence job performance have been proposed. According to Campbell, McCloy, Oppler, and Sager (1993), performance is a function of three determinants: (a) declarative knowledge (i.e., factual knowledge about specific things), (b) procedural knowledge/skill (i.e., degree to which one is actually able to perform a task), and (c) motivation (i.e., the combined effect of the choice to expend effort, the choice of the level of effort to expend, and the choice to persist at that level of effort). Performance on a given job dimension is determined directly by some combination of these three determinants. The direct determinants are distinguished from indirect performance determinants, which can only influence performance via the direct determinants. Examples of indirect determinants provided by the organization include reward systems, training, and management practices. Examples of indirect determinants that the individual brings to the organization are abilities, personality, education, and experience.

Campbell et al.'s (1993) model of performance determinants provides a general explanation for how individual differences in predictor variables translate to individual differences in job performance on a particular dimension. Motowidlo, Borman, and Schmit (1997) expanded the Campbell et al. model to explain why personality should be a better predictor of citizenship performance dimensions than of task performance dimensions. They split

declarative knowledge and procedural knowledge/skill into *task knowledge and skill* and *citizenship knowledge and skill*. Task knowledge is knowledge of facts, principles, and procedures relevant to the core technical functions of the organization; task skill is skill in performing necessary actions to complete tasks. Citizenship knowledge is knowledge of facts, principles, and procedures relevant to maintaining the organizational environment in which the technical core must function (e.g., knowing how to cooperate with others, knowing how to present a favorable image of the organization). Contextual skill is skill in performing actions known to be effective in situations calling for citizenship performance. Task knowledge and skill are determined primarily by cognitive ability, which is supported by ample research (Borman et al., 1995; Hunter, 1983; Lance & Bennett, 2000). Motowidlo et al. suggested that personality should be the primary determinant of citizenship knowledge and skill, because people possessing personality characteristics consistent with a particular element of citizenship knowledge or skill should be more likely to notice the relative effectiveness of certain patterns of behavior in relevant situations, and thus more likely to master that knowledge or skill.

The Motowidlo et al. (1997) model is further distinguished from the Campbell et al. (1993) model by replacing motivation with task and citizenship work habits. Work habits are patterns of behavior people learn over time that can facilitate or interfere with job performance. Work habits include characteristic motivational responses such as choices for the amount, intensity, and duration of effort to expend; tendencies to approach or avoid certain situations; procrastination; or persistence in the face of adversity. Work habits also include characteristic responses that are not necessarily motivational in nature (e.g., an officer who has been trained in the best way to deal with a problem subordinate, but occasionally reverts to pre-training habits of reacting with hostility). Task work habits are characteristic responses to situations that interfere with or facilitate the completion of tasks. Citizenship work habits are characteristic responses that interfere with or facilitate performance in citizenship work situations. Motowidlo et al. suggested that task habits are predicted by both cognitive ability and certain personality variables (e.g., conscientiousness), and citizenship habits are predicted primarily by certain other personality variables (e.g., agreeableness, extroversion). Because personality variables are expected to influence more determinants on the citizenship side of the model and ability variables are expected to influence more determinants on the task side of the model, personality should be more related to citizenship performance and ability should be more related to task performance.

A More Complete Model of Performance Determinants

The Campbell et al. (1993) and Motowidlo et al. (1997) models are good general models of performance prediction, but they are deficient in that they do not explain the process by which specific individual differences influence performance on specific dimensions. Johnson (2003) pointed out that motivation is given inadequate attention by these models and proposed an expanded model of how individual differences influence job performance. This model is compatible with those of Campbell et al. and Motowidlo et al., but adds elements to both. The major difference is an expanded conceptualization of motivation. Campbell et al. use a cognitive choice model of motivation, in which the choice to perform leads directly to behavior. There is no explicit provision for motivational processes that may be used to overcome difficulties in the accomplishment of the intention to perform.

Motowidlo et al. replaced motivation with work habits, which they defined as stylistic ways people handle different kinds of situations that occur on the job, learned as their basic tendencies (personality traits) interact with their environments over time. Habits are an important component to include in a model of performance determinants because they may interfere with performance despite motivation to perform in a certain way. Rather than replacing the motivation component, however, Johnson (2003) included work habits in addition to motivation. Although Motowidlo et al. included choices for how much effort to exert and for how long as examples of characteristic motivational responses under work habits, this appears to exclude motivational choices that go against one's habitual tendencies. For example, a person's characteristic tendency may be to exert as little effort as possible, but he or she may choose to go against that tendency in response to a new bonus structure that rewards productivity.

Because motivation is such an important mediating variable between individual differences and job performance, Johnson (2003) more completely described that aspect of the model in an attempt to better understand the nature of these relationships. Johnson noted that habits influence behavior, despite intentions to behave otherwise, because they require very little attention. To implement an intention that goes against habitual tendencies and other intentions competing for one's attention, one must engage self-regulatory or volitional mechanisms. Self-regulation refers to the higher-level cognitive processes that guide the allocation of attention, time, and effort across activities directed toward attaining a goal (Kanfer, 1990) and protect an intention from being replaced by a competing action tendency before the intended action is completed (Kuhl, 1985). Self-regulation is a critical component of motivation that is missing from the Campbell et al. (1993) and Motowidlo et al. (1997) models.

Some theories integrate cognitive choice and self-regulatory aspects of motivation (Heckhausen & Kuhl, 1985). The importance of this integrative perspective is that different dispositional variables are proposed to influence motivation at different stages, providing a framework for more systematic investigation of how individual differences (primarily personality) affect motivation and job performance (Kanfer, 1990). Mitchell and Daniels (2003) identified two components of motivation: (a) proactive cognitive processes, and (b) on-line cognitive processes. Proactive cognitive processes occur before a task is commenced, and reflect cognitions about expectations for achieving a goal or the value of outcomes resulting from achieving a goal. During this phase, people determine what course of action to take, resulting in the formation of an intention. Mitchell and Daniels include expectancy, self-efficacy, and goal-setting in the proactive category of motivation theories. On-line cognitive processes occur while the person is working on a task, and are characterized by self-regulatory processes that are necessary to maintain goal-directed action. This phase refers to the process of implementing an intention to achieve a goal. Control theory, action theory, and self-regulation are on-line theories of motivation (Mitchell & Daniels, 2003).

Johnson (2003) added psychological motives as a third component of motivation. A motive is a reason (e.g., value, interest, preference, attitude) for choosing to exert effort in a particular direction. Motive-based theories recognize that people may have very different purposes for exhibiting the same behavior (Borman & Penner, 2001). For example, one officer may help another complete a task because the officer values helping others succeed. Another officer may exhibit the same helping behavior because he or she believes it will benefit the Army

to get the work done. The first officer has an altruistic motive and the second officer has an organizational commitment motive, but they both lead to the same behavior. Motives are expected to directly influence proactive cognitive processes (Johnson, 2003; Kanfer, 1992).

One type of motive that has been extensively studied is job attitudes. Job attitudes tend to be more strongly related to citizenship performance than are personality variables (Podsakoff et al., 2000), leading Organ and Ryan (1995) to conclude that the relationship between personality and citizenship performance is probably mediated by attitudes such as job satisfaction, organizational commitment, and fairness perceptions. Organizational commitment is an especially important motive for the military context (Gade, 2003), and its components have been shown to predict various types of job-related behaviors (Gade, Tiggel, & Schumm, 2003; Karrasch, 2003). Given that affective commitment to the organization is related to the extent to which individuals engage in citizenship behaviors (Allen & Meyer, 1996), this is an important motive to evaluate for military officers.

Johnson's (2003) general model of the pathways by which individual differences in predictor variables influence performance on a given dimension is presented in Figure 1. Consistent with Campbell et al. (1993), performance is a function of knowledge, skill, and motivation. The Johnson model expands motivation into the components of motives, proactive cognitive processes, and on-line cognitive processes. Besides the expanded conceptualization of motivation, another difference from Campbell et al. is the addition of work habits as a fourth determinant in recognition of the possibility that job-relevant behavior can occur automatically despite motivation to behave otherwise. Work habits also influence performance indirectly by influencing the need for and choice of self-regulatory strategies. For simplicity, the only indirect determinants included are personality variables and ability variables. This model could be expanded to include other classes of individual (experience, interests) or organizational (training, rewards) indirect performance determinants. The model also recognizes the numerous potential moderators (e.g., occupation, tenure) that can influence the extent to which individual differences predict performance.

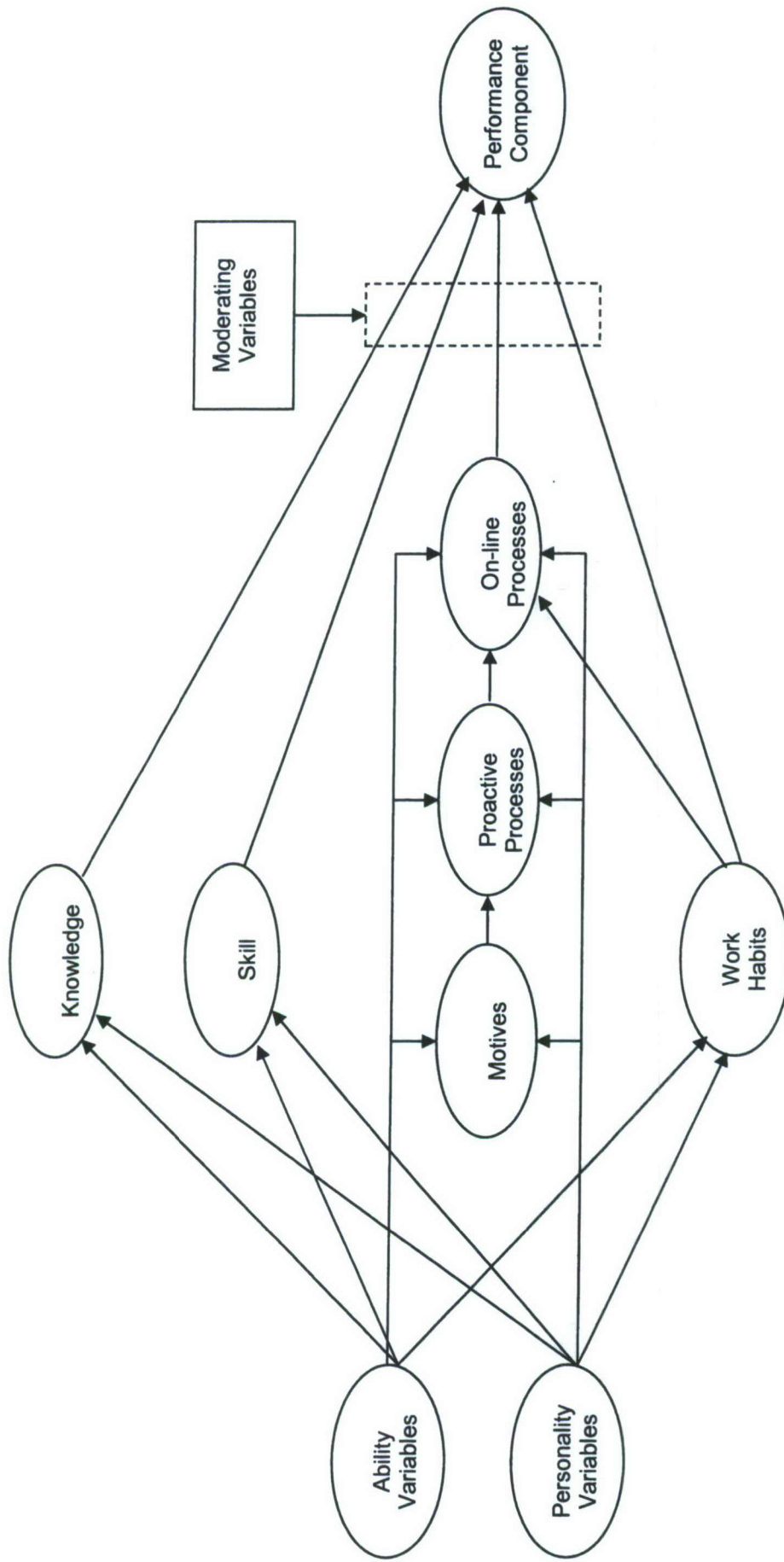


Figure 1. Johnson (2003) model of the mediators through which individual differences in personality and ability variables influence individual differences on specific dimensions of job performance.

The model in Figure 1 is a general model describing the potential paths through which different classes of variables may operate to influence different types of performance. The relative strength of each path from one construct to another depends on the specific predictor variables included in the model and the specific performance dimension that is the criterion. For example, if achievement were used to predict the demonstrating effort dimension of citizenship performance, the strongest path would likely go through motivation because motivation is highly relevant to demonstrating effort, and achievement is highly relevant to each component of motivation. If sociability were used to predict the maintaining good working relationships dimension of citizenship performance, however, the stronger paths would likely go through knowledge and skill. This is because social knowledge and skill are highly relevant to maintaining good working relationships, they are likely to be predicted by sociability, and sociability is not as strong a predictor of motivation.

The defining feature of the model that should be consistent across all predictors and criteria is that performance is directly determined by one or more of the following constructs: (a) knowledge, (b) skill, (c) motivation, and (d) habits. Indirect performance determinants such as personality, ability, and experience should only influence performance through the direct determinants. Performance on many dimensions may be a function of all four determinants, while performance on other dimensions may be a function of only one, two, or three. For example, habits may not predict performance on a dimension that requires behavior that is not amenable to automatic processing. Other performance dimensions, particularly some in the citizenship performance domain, may require very little knowledge or skill and are determined almost entirely by motivational processes (e.g., volunteering for extra work).

The purpose of this model is to identify the constructs through which individual difference variables work to influence performance on specific performance dimensions. It can be used to choose appropriate predictors for a given criterion construct. The strength of the relationship between the predictor and the criterion depends on (a) the number of direct determinants of the criterion to which the predictor is related, (b) the strength of the relationship between the predictor and each direct determinant, (c) the strength of the relationship between each direct determinant and the criterion, and (d) the presence of relevant moderators.

When predicting task performance dimensions, ability variables should be most predictive because of their strong relationships with task knowledge, task skill, and task habits, and the strong relationships between these direct determinants and task performance. Personality variables also should contribute, but to a lesser degree, because of their strong relationships with motivation but weaker relationships with task knowledge, task skill, and task habits. When predicting citizenship performance, personality variables should be most predictive because of their strong relationships with motivation and citizenship knowledge, skill, and habits. Ability variables should be predictive to a lesser extent because of their weaker associations with these constructs. Personality variables are probably most predictive of adaptive performance because of the importance of self-regulatory skills when quickly adjusting to a new situation. Ability variables should also be strongly related because of the importance of skills such as problem solving.

Overview of Research

The purpose of this research was to test the Johnson (2003) model of performance determinants for different kinds of performance, explicating the relative strength of different paths for specific performance dimensions. To accomplish this, we developed or obtained measures of each construct specified in the model, including a large number of potential indirect performance determinants (e.g., cognitive ability, personality scales, action control scales, and attitudes). We then administered each instrument to a sample of ROTC cadets, each of whom was rated on their performance by one to four peers. Participants were third- and fourth-year cadets with experience leading others to enhance the generalizability of the results to junior officers in the Armed Forces. This allowed us to obtain data from a population that was accessible to us, and enabled us to examine constructs and develop instruments that are relevant to the military. Each cadet was rated on (a) decision making/problem solving, (b) maintaining good working relationships, (c) organizational commitment, (d) showing initiative, and (e) adapting to uncertain or changing situations. The first dimension is an element of task performance (Johnson, 2003), the middle three dimensions all tap different aspects of citizenship performance (Borman, Buck et al., 2001), and the final dimension is an element of adaptive performance (Pulakos et al., 2000).

To demonstrate that each performance dimension is an important part of the performance domain for the population of interest, we determined the unique and relative contribution of each dimension to ratings of overall job performance. We expected that each performance dimension would contribute unique variance to ratings of overall performance. In addition to identifying the unique variance contributed by each performance dimension, we estimated the relative importance raters place on each dimension by conducting a relative weight analysis (Johnson, 2000). Relative weight analysis is a procedure for quantifying the relative importance of predictor variables in multiple regression. Relative weights reflect the proportionate contribution each predictor makes to R^2 , considering both its unique contribution and its contribution when combined with other variables. Thus, relative weights are interpretable as measures of relative importance even when predictor variables are correlated. Johnson (2001) used this procedure to demonstrate the relative importance of specific task and citizenship performance dimensions to evaluations of overall performance. We expected that each performance dimension would be relatively important to overall performance judgments.

We used structural equation modeling to evaluate the Johnson (2003) model for each of the five performance dimensions. Support for the model is indicated by (a) fit statistics that meet the standards for good model fit, and (b) significant path coefficients indicating that the paths between indirect performance determinants and performance are not direct but rather go through the hypothesized mediating variables. We expected that approximately the same model would describe the performance prediction process for all types of performance dimensions, in that the hypothesized indirect performance determinants would influence performance only through the hypothesized direct performance determinants. The relative strength of different paths should vary across different dimensions of performance.

Support for this model would provide researchers and practitioners with a tool that can be used to identify the constructs through which individual difference variables work to influence

performance on specific dimensions. This is especially important for identifying predictors of citizenship and adaptive performance. Such a tool would contribute to a better understanding of the relationships between predictors, mediators, and job performance criteria, and could be used to choose appropriate predictors for a given criterion construct.

Method

Participants

Examinees

Participants for whom predictor data and performance ratings were obtained were 155 cadets and midshipmen in Army, Navy, and Air Force ROTC programs at six U.S. universities (Colorado State University, Michigan State University, Purdue University, University of Minnesota, University of North Carolina – Charlotte, and University of South Florida). Participants were recruited through in-class announcements and advertising in ROTC buildings. Only junior and senior level students were eligible to participate in the research to ensure adequate ROTC experiences. Service branch representation was 54.2% Air Force, 35.3% Army, and 10.5% Navy. The sample contained 23 participants (15%) who had prior military experience. Among these cadets/midshipmen, the mean was 4.3 years of prior military service ($SD = 2.6$). Complete demographic characteristics for the sample are presented in Table 1.

Table 1
Demographic Characteristics of Examinee Sample

Gender	<i>N</i>	Percentage
Female	30	19
Male	125	81
Race		
White	136	88
Black	6	4
Hispanic	2	1
Asian	7	4
Other	4	3
ROTC Year		
Third	92	59
Fourth	62	40
Other	1	1
ROTC Service Branch		
Army	56	36
Air Force	83	53
Marine Corps	4	3
Navy	12	8
University		
University of Minnesota	36	23
University of South Florida	11	7
University of North Carolina—Charlotte	3	2
Colorado State University	25	16
Michigan State University	12	8
Purdue University	68	44

Raters

Participants who completed performance ratings were 90 cadets/midshipmen who were in the same ROTC program as the people they rated. Each rater designated a set of possible ratees based on their self-assessment of their ability to accurately rate the person on each of the five dimensions of performance. Raters rated an average of 5.6 ratees ($SD = 2.8$). Demographic data were not collected from raters, but because 75 raters also participated in the earlier portion of the project, demographic data were available for them. Table 2 presents demographic data for this sample of raters.

Table 2
Demographic Characteristics of Rater Sample

Gender	<i>N</i>	Percentage
Female	19	21
Male	56	75
Race		
White	67	89
Black	2	3
Hispanic	0	0
Asian	3	4
Other	3	4
ROTC Year		
Third	43	57
Fourth	32	43
ROTC Service Branch		
Army	29	39
Air Force	38	51
Marine Corps	2	2
Navy	6	8
University		
University of Minnesota	23	31
University of South Florida	6	8
University of North Carolina—Charlotte	1	1
Colorado State University	8	11
Michigan State University	3	4
Purdue University	34	45

Note. Demographic data were missing for 15 raters.

Measures

We developed or obtained one or more measures relevant to each construct specified in the model (see Figure 1). To measure performance components, we developed a performance rating instrument to be completed by peer raters that measures an individual's level of performance on five different dimensions. In Figure 1, indirect performance determinants were represented as ability variables and personality variables. We measured general cognitive ability as the ability variable and a variety of personality traits, including motivational traits, as the personality variables. In addition, we measured the following indirect performance determinants: (a) social insight, (b) experience, and (c) action control. We measured the following motives: (a) interests, (b) job satisfaction, (c) military values, (d) organizational commitment, and (e) citizenship motives. We developed an instrument to measure the following proactive cognitive processes: (a) self-efficacy, (b) expectancies, and (c) goal commitment. On-line cognitive processes were measured by developing a self-regulation inventory that assessed one's success in self-regulating when performing behaviors relevant to each performance dimension. Work habits were measured by developing a scale that assessed the extent to which one's habitual way of

doing things facilitates or interferes with performance on each dimension. Knowledge was measured by creating a situational judgment test relevant to each performance dimension. Finally, skill was measured by creating a past behavior record that asked respondents to describe a situation in which they exhibited behavior relevant to each performance dimension.

In the following sections, we describe each of these instruments in detail. For instruments developed specifically for this research, we describe the steps that were taken in the development procedure. All instruments developed for this research were based on input from and/or reviewed by cadets and midshipmen in the Army, Navy, and Air Force ROTC programs at the University of Minnesota. These cadets and midshipmen were compensated for their input at rates of \$25 for a one-hour workshop, \$35 for a two-hour workshop, and \$50 for a three-hour workshop.

Performance Rating Instrument

The *Performance Rating Instrument* was developed specifically for this project to include items relevant to each of the targeted performance dimensions. The first step in developing this instrument was to identify the performance dimensions to be measured. We conducted a performance domain definition workshop with three cadets/midshipmen from each ROTC branch at the University of Minnesota (a total of nine cadets), in which we determined how task, citizenship, and adaptive performance were defined for ROTC cadets and midshipmen. We provided participants with definitions of task, citizenship, and adaptive performance dimensions from Johnson's (2003) performance dimension taxonomy (see Appendix A). We then asked them to identify dimensions that are particularly important and salient across all branches. Our goal was to identify one dimension within each component of citizenship performance (i.e., personal support, organizational support, conscientious initiative; see Borman, Buck et al., 2001), plus adaptive performance (i.e., dealing with uncertain and unpredictable work situations; see Johnson, 2003; Pulakos et al., 2000). We also asked the cadets and midshipmen to identify one task performance dimension from the taxonomy that was relevant and had the same meaning across all three branches.

The workshop participants identified decision making/problem solving as the best task performance dimension to include in the project. The participants confirmed that adapting to uncertain and changing situations is relevant to the role of ROTC cadet/midshipman and is conceptually distinct from decision making/problem solving, so it was determined to be an appropriate dimension of the adaptive performance domain for measuring in this project. The participants identified maintaining good working relationships and helping others as potential dimensions to represent personal support, organizational commitment to represent organizational support, and showing initiative to represent conscientious initiative. After identifying the target performance dimensions, we asked the participants to generate lists of behaviors that may be exhibited by ROTC cadets that exemplify high levels of performance on those dimensions.

We identified a set of items for the draft performance rating instrument using the behavioral examples collected during the performance domain definition workshop. In developing this draft set of items, we edited and included items from other performance appraisal instruments PDRI has created that measure similar dimensions of performance. We chose the

best subset of items for each dimension to include in the draft instrument, which resulted in a draft instrument consisting of 79 items measuring six dimensions and overall performance.

We then reviewed the draft performance rating instrument in a separate workshop consisting of nine cadets (three from each ROTC branch). In the workshop, we explained the purpose of the research and asked the participants to review the performance rating form and instructions. We asked them to review these materials for understanding and appropriateness of the terminology, ratability of items, and appropriateness as a performance evaluation tool. We also asked for their opinions on keeping either maintaining good working relationships or helping others as the dimension for personal support. The participants thought helping others was less observable because it is often a one-on-one behavior and they saw it as a subset of maintaining good working relationships. Thus, we kept maintaining good working relationships as the performance dimension representing personal support and dropped helping others.

The materials were revised based on the information gathered during these workshops. The final performance rating instrument consisted of 40 behavioral statements measuring the five performance dimensions and overall performance. The instructions asked raters to rate the individual on the extent to which each behavioral statement describes him or her on a scale ranging from 1 = *not at all* to 5 = *to a very great extent*, with a *not observed* option. Rater training was provided in written form, focusing on how to use the rating scales and awareness of common rating errors. The instrument was designed to be completed online. The performance rating instrument is included in Appendix B.

Cognitive Ability Measure

General cognitive ability was measured with the Wonderlic Personnel Test (WPT) (Wonderlic Personnel Test, 1992). The WPT is a 12-minute test that assesses vocabulary, arithmetic reasoning, and spatial relations. It consists of 50 multiple-choice questions of increasing difficulty and has been shown to be both a reliable and construct-valid measure of *g* (Murphy, 1984). Normative data for the WPT indicate a mean score of 21.06 (SD = 7.12) and test-retest reliability ranging from .82 to .94.

Personality Measure

The Johnson (2003) performance prediction model was used to generate hypotheses about the personality variables that were expected to influence the direct determinants of each performance dimension. Scales from the International Personality Item Pool (IPIP) (2001; <http://ipip.ori.org>), described in Goldberg (1999), were chosen to cover the range of personality scales that were needed. Use of these items is free to investigators for use in their research, and the IPIP item pool includes scales from virtually all prominent personality inventories. Lim and Ployhart (2006) provided construct validity support for the IPIP. Seventeen scales were selected for inclusion in the project, some of which were facets of the Big Five and others of which were simply specific personality constructs that were expected to be related to one or more performance dimensions. The number of items in each scale ranged from 8 to 14. Participants were instructed to rate the extent to which each item described them with a rating scale ranging from 1 = *Definitely True* to 5 = *Definitely False*.

Motivational Trait Questionnaire

The Motivational Trait Questionnaire (MTQ) was developed to measure individual differences in traits relevant to work motivation (Heggstad & Kanfer, 2000). The MTQ measures four broad traits: personal mastery and competitive excellence are facets of achievement motivation, and achievement anxiety and failure avoidance are facets of anxiety. This 82-item instrument uses a 6-point response scale ranging from 1 = *Very UNTRUE of Me* to 6 = *Very TRUE of Me*.

Social Insight

We included the Social Insight scale from the *PDRI Social Competence Inventory, Version 2* (SCI-2) (Schneider, 2001). The SCI-2 is a self-report measure of the broad social competence domain. Its items are rated on a Likert-type scale, ranging from 1 = *Definitely False* to 5 = *Definitely True*. This scale measures the extent to which a person believes he or she is able to (a) discern the motivations, feelings, and intentions underlying people's behavior by correctly interpreting behavioral cues; (b) see things from others' perspectives; and (c) accurately predict others' behavior (Schneider & Johnson, 2005). This scale was found to be distinct from the interpersonal personality trait domain and was a good predictor of several interpersonal performance dimensions in Schneider and Johnson (2005), so we expected that it would be a good predictor of maintaining good working relationships. The 23-item scale was reduced to nine items by retaining the items that had the largest correlations with Schneider and Johnson's performance dimensions.

Experience Inventory

An experience inventory was created in which respondents were presented with the items from the performance rating instrument and asked to rate the frequency with which they have engaged in each behavior in the last few years. The response scale was taken from Pulakos, Schmitt, Dorsey, Arad, Hedge, and Borman (2002), with 1 = *Never*, 2 = *Once or Twice*, 3 = *Several Times*, and 4 = *Frequently or Routinely*. The Experience Inventory is included in Appendix C.

Action Control Scale

Kuhl's (1985) action control theory focuses on the translation of an intention to an action through self-regulatory processes. According to action control theory, self-regulatory skill is partially determined by an individual's action-state orientation. Action-state orientation is conceptualized by Kuhl as a continuous individual-differences variable. More action-oriented individuals are better able to devote their attention to the current goal. More state-oriented individuals tend to ruminate on alternative goals or emotional states, reducing the cognitive resources available for striving for the current goal. Diefendorff, Hall, Lord, and Streat (2000) evaluated the construct validity of a revised version of a measure of action-state orientation, the *Action Control Scale* (Kuhl, 1994). This scale measures three dimensions of action-state orientation: (a) preoccupation (degree to which individuals detach from thoughts about interfering goals), (b) hesitation (difficulty in initiating goal-directed action), and (c) volatility

(degree to which individuals become distracted when working on a task). Diefendorff et al. conducted confirmatory factor analyses to confirm the three-factor model and used the results to create a revised version of the Action Control Scale. The revised version consists of 22 items measuring the three scales. They found that the action control scales contributed significant variance beyond a measure of the Big Five personality dimensions to the prediction of supervisor ratings of task performance and several organizational citizenship performance dimensions. We created an instrument for this research by writing instructions and assembling the items from Diefendorff et al. into a questionnaire format. The revised Action Control Scale is included in Appendix D.

Military Motives Scale

The Military Motives Scale (MMS) measured values, interests, and attitudes that were expected to predict proactive cognitions relevant to the target behaviors. The MMS measured job satisfaction, military values, organizational commitment, and interests.

The Job Satisfaction scale was constructed by taking 13 job satisfaction items from the Sample Survey of Military Personnel (Schumm, Gade, & Bell, 2003a) that appeared to be relevant to the role of ROTC cadet/midshipman. During a review workshop consisting of eight cadets and midshipmen, these items were revised and two additional items were added to create a 15-item scale for the final instrument. Respondents were asked how satisfied they are with the aspect of their role as an ROTC cadet/midshipmen represented by the item, with a response scale ranging from 1 = *very dissatisfied* to 5 = *very satisfied*.

The Military Values Scale was constructed by taking 15 professional values items from the Sample Survey of Military Personnel (Schumm, Gade, & Bell, 2003b) that appeared to be relevant to the role of ROTC cadet/midshipman. Some of the items were revised during the review workshop to make them more applicable to ROTC. Respondents were asked how important each value is to them, with a response scale ranging from 0 = *not at all important* to 4 = *very important*.

The Organizational Commitment scale was constructed by taking four items measuring affective commitment and four items measuring continuance commitment identified by Gade, Tiggel, and Schumm (2003). One item was revised for clarity during the workshop. Respondents were asked to indicate the extent to which they agreed with each statement, with a response scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

An interest inventory was created measuring interest in taking part in situations that demand behavior relevant to the target performance dimensions. We adapted the behaviors on the performance rating instrument, consolidating behaviors where it made sense, to create a set of 33 behavioral statements. For each behavior, respondents were asked to imagine they are in a situation where they have to engage in the behavior and rate the extent to which they would enjoy that situation. The response scale ranged from 1 = *I would dislike this situation very much* to 5 = *I would like this situation very much*. This scale was created after considerable input from cadets and midshipmen participating in the review workshop. The MMS is included in Appendix E.

Citizenship Motives Scale

Rioux and Penner (2001) created a Citizenship Motives Scale (CMS) to measure three different motives for engaging in organizational citizenship behaviors: (a) prosocial values, (b) organizational concern, and (c) impression management. The prosocial values scale consists of 10 items measuring a need to be helpful and a desire to build positive relationships. The organizational concern scale consists of 10 items measuring a desire for the organization to do well and a desire to show pride in and commitment to the organization. The impression management scale consists of 10 items measuring a desire to avoid looking bad to others and to obtain rewards.

We adapted this scale to our own research by presenting participants with a definition and example behaviors for each of the three citizenship performance dimensions we targeted. For each performance dimension, we presented the 30 CMS items, asking how important each motive statement is in the decision to engage in behaviors that represent performance on that dimension. The response scale ranged from 1 = *not at all important* to 5 = *very important*. The CMS is included in Appendix F.

Proactive Cognitions Scale

The *Proactive Cognitions Scale* is a 111-item scale developed for this research. It includes questions about expectations, self-efficacy, and goal commitment. We measured expectancy by asking respondents to indicate the probability of attaining certain outcomes by engaging in a specific behavior. Specifically, the respondent is presented with each of the behaviors from the performance rating instrument. For each behavior, the respondent is asked to consider the probability of achieving one or more of the following outcomes if the behavior is performed:

- The unit would be more successful.
- I would receive personal recognition (e.g., praise, award).
- My unit would be favorably recognized.
- I would advance in my career.
- My peers would be pleased.
- I would avoid punishment.
- I would benefit personally at a later time (e.g., a future favor, time off).

Next, respondents are asked to rate the probability of achieving one or more of the above outcomes using a scale ranging from 1 = *highly improbable* to 5 = *highly probable*.

We measured behavior-specific self-efficacy by presenting the same set of items, with respondents indicating how effectively they would exhibit each behavior using a scale ranging from 1 = *highly ineffective* to 5 = *highly effective*. Pulakos et al. (2002) created a self-efficacy scale for adaptive performance using this procedure.

We measured goal commitment by presenting the same set of items and asking respondents to indicate how committed they are to performing the behavior during the following semester. They used the following scale to indicate their level of commitment:

- 1 = *Not at All Committed – I definitely will not do this.*
- 2 = *Slightly Committed – I probably will not do this.*
- 3 = *Somewhat Committed – I may or may not do this.*
- 4 = *Committed – I will probably do this.*
- 5 = *Very Committed – I will definitely do this.*

The Proactive Cognitions Scale is included in Appendix G.

Self-Regulation Inventory

Research on self-regulation is diverse, spanning several fields of psychological study (Corno, 2004). It includes the study of emotion control as part of social intelligence; investigations of interventions to improve physical health; the examination of volitional strategies in both educational and work settings; and research on goals, self-efficacy, feedback, and goal-performance discrepancies (and their reduction). Given this broad and scattered work, it is not surprising that there is little agreement on how to define self-regulation (Vancouver & Day, 2005) and many models of self-regulation have been developed (Kozlowski & Bell, 2006). Although many of these models include three interdependent processes—self-monitoring, self-evaluation, and self-reactions (Donovan, 2002; Kanfer & Heggestad, 1997; Kozlowski & Bell, 2006)—numerous constructs have been proposed to be components of these processes and other aspects of self-regulation (Karoly, Boekaerts, & Maes, 2005). Within industrial and organizational psychology, “...relatively little attention has been paid to assessing whether the constructs represent meaningful mechanisms involved in goal processes and/or are unconfounded with other key constructs...The cumulative result of these issues is little progress in terms of *understanding* self-regulation’s role in work processes or *rigorous assessments* of interventions based on a self-regulation perspective.” (Vancouver & Day, 2005, p. 157). The relationships among self-regulatory constructs are not well known (Sperling, Howard, Staley, & DuBois, 2004). Thus, the selection of measures to assess self-regulation is not straightforward.

Theory and research has suggested that individual differences in self-regulation can be conceptualized both in terms of traits and as responses to specific situations (Kanfer & Heggestad, 1997, 1999; Sarason, Sarason, Keefe, Hayes, & Shearin, 1986). Measures of both are included in the present research. The MTQ described earlier represents the trait approach to self-regulation and the Self-Regulation Inventory represents the situational response approach. In the following section, we explicate the theoretical rationale for the items included on the Self-Regulation Inventory.

Several approaches have been used when examining self-regulation as a response to a specific situation. These include observing self-regulatory activities, assessing the mechanics of self-evaluation, measuring motivational or volitional skills, quantifying affective (e.g., emotional states) or cognitive self-reactions (e.g., self-efficacy), and evaluating the direction of attention.

Observation is one approach that has been used to assess self-regulatory activities (Kozlowski & Bell, 2006). For example, time spent reviewing feedback has been used to measure self-evaluation (Kozlowski & Bell, 2006). An obvious advantage of this approach is that it does not rely on individuals' recognition of their own self-regulatory processes. However, this methodology requires the assumption that the time spent looking at certain materials accurately reflects use of self-regulatory mechanisms and it can only be used in contexts where researchers have control over the materials available for individuals to use while working. In the present research, self-reports of self-regulatory activities will therefore be used. Research in educational settings has found associations between such self-reports and academic performance. For example, self-reports of self-monitoring were correlated with course grades and subjective measures of academic achievement (Perry, Hladkyj, Pekrun & Pelletier, 2001)

Researchers seeking to understand the effects of goal setting on self-regulation and performance have focused on examining the mechanics of self-evaluation. Prominent in this work are the constructs of goals, performance, goal-performance discrepancies, and goal revision. Each variable considered is quantified independently. For example, the content and/or level of the goal and the level of performance are assessed. Repeated measures designs have been used to evaluate the dynamic interplay of goals and performance. This research has yielded insight into how individuals manage their goal-directed behavior over time, but it is best suited for the study of well-defined and limited tasks, such as those used in laboratory studies or in training courses. In a complex context such as the one examined in the present research, individuals pursue diverse and multiple tasks, making it problematic to assess each component utilized in self-evaluation.

Other scholars have focused on understanding volitional strategies or motivational skills. For example, Kuhl (1985; Kuhl & Fuhrmann, 1998) has assessed a variety of volitional strategies. Kanfer and Heggstad (1997, 1999) have argued that malleable and domain-specific motivational skills play an important role in the goal-striving process (Kanfer & Heggstad, 1997). "Motivational skills pertain to the self-regulatory strategies used by individuals during goal striving. Self-regulatory strategies are defined as integrated patterns of response to difficulties or anticipated difficulties in goal-directed action. Such skills provide agentic control of affect, cognition, and behavior that facilitate goal accomplishment." (Kanfer & Heggstad, 1997, p. 39).

While acknowledging that other motivational skills have been proposed, Kanfer and Heggstad (1997) focused on two: (a) emotion control, and (b) motivation control. They note that little progress has been made in measuring these skills. Challenges include the need to assess "on-line" self-regulatory processes using diary procedures (Maes & Karoly, 2005) and the likelihood that accurate measurement requires assessing individuals when they are experiencing difficulty in goal-striving. Motivational skills are most likely to be used, and therefore amenable to assessment, under specific conditions. Emotion control is most important when tasks are new and negative emotions, such as concerns about failure, self-dissatisfaction, and worry about performance, must be managed. Unusually stressful or boring tasks are thought to be times when training to strengthen motivation control might be helpful (Kanfer & Heggstad, 1997). Lack of experimental control creates considerable uncertainty about when these conditions will arise in a field setting, making it difficult to accurately assess motivational skills. Failure to observe

emotion control or motivation control may be an indication that self-regulatory challenges requiring the use of volitional strategies have not arisen, rather than a sign that a person lacks motivational skills.

In order to take into account the domain-specific nature of motivational skills and their “on-line” use, we posed self-regulatory questions in the context of specific dimensions of job performance. Individuals were asked to think about times in the past month they had engaged in behaviors related to specific dimensions of performance. For each dimension of performance, a definition was provided. Subjects were then asked to respond to 17 items assessing four aspects of self-regulatory activity: (a) negative affect, (b) mental focus, (c) the impact of self-regulatory failure, and (d) work habits. For each item, ratings were made on a 5-point Likert-type agreement scale ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. These aspects of self-regulatory activity are described in the following paragraphs.

Several researchers have attempted to overcome the problem of determining whether a failure to observe emotion control is an indication that the situation did not require the use of volitional strategies or a sign of poor motivational skills by measuring affect, rather than emotion control (Diefendorff, Richard, & Robie, 2005; Kanfer, Ackerman, Murtha, Dugdale, & Nelson, 1994; Kozlowski & Bell, 2006). Self-reactions are one of the three broadly recognized self-regulatory constructs. They include both affective reactions (i.e., self-satisfaction or dissatisfaction) and cognitive task-related self-perceptions (i.e., self-efficacy). Frequent experiences of negative affect while working on a task are a signal that individuals are aware of falling short of their desired behaviors and have not successfully utilized volitional skills or strategies to address their potentially destructive associated negative dissatisfactions. Previous research has found that negative affect is positively associated with having difficult goals (Kanfer et al., 1994) and negatively related to basic knowledge acquisition and basic performance following training (Kozlowski & Bell, 2006). Note that positive affect may be experienced either because no self-regulatory challenges are encountered or because volitional strategies have been deployed successfully. Thus, the interpretation of experiences of positive affect while working is ambiguous and was not measured in this research. Four items assessing experiences of negative affect were included in the measure of self-regulatory activity included in this research. These items were adapted from instruments developed by Kanfer et al. (1994) and Diefendorff et al. (2005).

A number of researchers have investigated intrusive thoughts individuals report having while working on tasks (Diefendorff et al., 2005; Kanfer et al., 1994; Kozlowski & Bell, 2006; Sarason et al., 1986). Intrusive thoughts are ones that do not directly pertain to doing the task. They may be completely unrelated to the task, or may focus on aspects of the task that are unrelated to the task. For example, off-task thoughts may include contemplating other activities. Intrusive on-task thoughts include worrying about performance and task difficulty. Depending on their content, intrusive thoughts could be indicative of a variety of self-regulatory activities, including a failure of attention control, attempts to identify methods to address goal-performance discrepancies identified through self-evaluation, or a general sign that goal striving has ceased. The measure used in the present research attempts to assess the latter. Past research has been mixed on the relationship between intrusive thoughts and performance. In one study, intrusive thoughts about the task were negatively related to task performance, but off-task or wandering

thoughts were not (Sarason et al., 1986). Mental focus was related to course performance in one study (Lee, Sheldon, & Turban, 2003), but not a second (Diefendorff et al., 2005). Four of the 17 self-regulatory activity items in our instrument assessed mental focus. Ideas for item content were based on items included in measures used by Kanfer et al. (1994) and Diefendorff et al. (2005) in studies of training performance on computer tasks and course performance, respectively.

Six items were developed to measure the impact of self-regulatory failure on performance. These items attempt to more directly evaluate poor use of self-regulatory skills, rather than to infer that individuals were experiencing self-regulatory challenges from assessments of affect and cognition. The items assessed respondents' agreement that poor emotion, motivation, or behavioral control hurt their performance.

The three final items used to assess self-regulatory success focused on the extent to which the respondents' work habits helped or hindered performance. To the extent work habits fostered effective performance, self-regulatory processes during goal striving would be automatic, reducing the need to use controlled, self-regulatory activities. Reports that work habits were not conducive to good performance are a sign that self-regulatory activities were needed.

The Self-Regulation Inventory was administered online approximately once a month for four months. Respondents were instructed to think back over the past month and recall the most recent ROTC-related situation when they performed a behavior relevant to each performance dimension. They then were instructed to keep that instance in mind when responding to the questions. For example, respondents were presented with the definition of decision making/problem solving and several sample behaviors (i.e., the behaviors from the performance rating instrument). Then they were asked to think about when they most recently experienced a situation in which they could make a decision or solve a problem related to ROTC. They were asked to take a moment to think about that time, visualize and walk themselves through the experience, and recall what the situation was leading up to the experience and what they did. Then they rated their agreement with each of the statements as they related to that experience. The Self-Regulation Inventory is included in Appendix H.

Work Habits Scale

"Work habits are patterns of behavior that people learn over time and that can either facilitate or interfere with the performance of behaviors that contribute to the accomplishment of organizational goals" (Motowidlo et al., 1997, p. 79). They reflect an individual's characteristic way of handling a class of situations that has developed over time through the pairing of a sequence of actions that constitute a satisfactory response to the cue of a situation (Verplanken & Orbell, 2003). Work habits can be viewed as a type of scripted behavior where the script is the cognitive structure capturing the learned associations between behaviors and goals (Verplanken & Orbell, 2003). Individuals are likely to use work habits automatically, unconsciously, and in an uncontrolled fashion (Verplanken & Orbell, 2003). Although work habits are likely to be characterized by efficiency (Verplanken & Orbell, 2003), they may not represent the best or most effective ways of handling situations at work (Motowidlo et al, 1997).

The development of measures of habits has been problematic. Most researchers have focused on assessing the frequency with which behaviors have been performed in the past, but this approach focuses on the repetitive nature of habits without accounting for their other key attributes (Verplanken, 2004). Other assessment approaches that have been developed are difficult to utilize in work settings. For example, response frequency methods can only be used to evaluate behaviors implemented in multiple situations, must be administered in a controlled setting, and require extensive pilot work for each behavior assessed (Verplanken & Orbell, 2003). Some self-report measures of habit strength have been criticized for relying on single item measures (Verplanken & Orbell, 2003). Longer and more reliable alternatives, such as the Self-Report Habit Index (Verplanken & Orbell, 2003), assess a limited number of quite specific behaviors (e.g., bus use), making them unsuitable to the measurement of the diverse and numerous habits individuals might use in work situations. Therefore, a new kind of work habits measure was developed for the present research.

The Work Habits Scale does not attempt to directly measure individual's work habits. Instead, it measures individuals' perceptions of the extent to which their habitual way of doing things helps or hinders their performance on the 37 behaviors that describe the five performance dimensions we assessed. Instructions for the instrument provide a definition of work habits and examples illustrating how work habits may facilitate or interfere with performance. Respondents then are given the definition of one of the performance dimensions and prompted to think first about the habits or routines that make performing this dimension easier and next to reflect on the habits or routines that interfere with performing this dimension effectively. Finally, respondents are asked to rate behaviors indicative of that performance dimension on a 7-point scale reflecting the extent to which their habitual way of doing things helps or interferes with performing the behavior (1 = *Interferes a great deal*; 7 = *Helps a great deal*). The process of presenting definitions of performance, reflecting on work habits, and rating behaviors is repeated for the remaining four scales. The Work Habits Scale is included in Appendix I.

Situational Judgment Test

Knowledge relevant to the performance dimensions chosen for evaluation was assessed with a *Situational Judgment Test* (SJT) that presents the individual with a situation and a set of response options varying in their effectiveness. SJTs are a type of job knowledge test (Legree, Psotka, Tremble, & Bourne, 2005; McDaniel & Nguyen, 2001; Salgado, Viswesvaran, & Ones, 2001; Schmidt & Hunter, 1993), and should be effective in measuring knowledge relevant to the performance dimensions in this research. A challenge in using SJTs to measure knowledge relevant to specific constructs is that SJTs are typically characterized by low internal consistency and multidimensionality, even when attempts are made to measure a specific construct (Gillespie, Oswald, Schmitt, Manheim, and Kim, 2002). Attempts have been made to create SJTs that measure specific constructs, but these constructs have typically been individual difference variables such as personality traits (e.g., Motowidlo, Diesch, & Jackson, 2003; Ployhart & Ryan, 2000; Trippe & Foti, 2003). SJTs are better thought of as knowledge measures (Chan & Schmitt, 2005; Kim, Schmitt, Oswald, Gillespie, & Ramsay, 2003), so they should be targeted toward the constructs they are intended to predict. Rather than targeting the SJT toward a multidimensional criterion of job performance, however, it should be targeted toward specific dimensions of performance. In this project, a construct-oriented test construction approach was used to develop

an SJT designed to measure the five target performance dimensions. We took the following steps to create the SJT:

Step 1: Situation generation. First, two situation generation workshops were conducted, involving 12 cadets and midshipmen representing each ROTC branch. In each workshop, cadets were presented with definitions of the target dimensions. They were asked to generate situational item stems by writing brief descriptions of situations they had witnessed or experienced, in which a cadet/midshipman demonstrated a high or low level of performance on one of the target dimensions. These descriptions were later edited for grammar and clarity. In addition, situations similar in content were combined, retaining the core elements of the situation and the knowledge involved in handling the situation.

Step 2: Response generation. Next, two response generation workshops were conducted, involving 12 cadets and midshipmen. These workshops included first- and second-year cadets as well as more experienced cadets to better generate response options that would appear realistic but vary in effectiveness. During the workshops, participants were asked to perform two tasks. First, they reviewed the situations generated in the preceding workshops to ensure that the situations were clear, realistic, relevant, non-obvious, and called for a response that represented performance on the target dimension. If a situation did not meet these criteria, participants were asked to suggest ways to improve the situation description. Second, participants were asked to write a one- or two-sentence response describing how they would handle each of the situations. Participants were instructed to only write responses that included behavior relevant to the targeted performance dimension. After the response generation workshops, we edited the response options for grammar, redundant content, construct relevance, and clarity. The outcome of this work was 96 realistic situations targeted toward the performance dimensions we identified, and a representative sampling of the kinds of responses cadets might make in these situations, spanning the continuum from very effective to ineffective actions.

Step 3: Response options selection. To choose the best response options for each situation, the responses were scaled according to their effectiveness level. Effectiveness ratings were collected from 15 third- and fourth-year cadets in two workshops. Each participant was instructed to read the situational item stem and all of the possible response options. Then the participants rated the effectiveness of each response option using a 7-point scale ranging from 1 = *very ineffective* to 7 = *very effective*. We calculated the mean and standard deviation of the effectiveness ratings assigned to each response option and used these data to choose the items to include in the SJT and the response options to be included for each item. We retained items for which four response options were available that (a) had mean effectiveness ratings that represented a broad range of effectiveness levels and (b) showed good agreement among raters in the level of effectiveness represented by each response option (i.e., $r_{wg} \geq .50$). We eliminated 28 items based on these criteria. This left 68 items, each with four response options.

To increase our pool of potential items, we included seven items written to measure “dealing effectively with unpredictable or changing work situations” in an SJT created by Pulakos and Dorsey (2000). This increased the pool of potential items to 75.

Step 4: Relevance ratings. To evaluate the construct relevance of each item, 10 experienced IO psychologists (mean years of experience working as an IO psychologist = 16.84, SD = 9.71; 8 with Ph.D., 2 with M.A.) completed a survey in which they rated the extent to which each situation would elicit a response that was relevant to each of the five performance dimensions and the extent to which each response option was relevant to the targeted dimension. Items were chosen for inclusion in the final SJT if they met the following criteria: (a) the item had a mean relevance rating of 4.00 or higher on a single performance dimension; (b) mean relevance ratings for each other dimension were less than 4.00; and (c) the difference between the highest mean relevance rating and the mean relevance ratings for all other dimensions was at least 0.50. This pattern of results would indicate that the item was a good measure of knowledge relevant to one performance dimension and it was a better measure for that dimension than for any other dimension. This decision rule yielded five items targeted at decision making/problem solving, nine items targeted at maintaining good working relationships, eight items targeted at organizational commitment, five items targeted at showing initiative, and eight items targeted at adapting to uncertain or changing situations. Because of the small number of items targeted at decision making/problem solving, we added one item that had a mean relevance rating of 3.91 on the target dimension, with a maximum mean rating on other dimensions of 3.00. Thus, the final version of the SJT consisted of 36 items.

Respondents were asked to do three things in responding to each item: (a) choose the most effective response to the situation, (b) choose the least effective response to the situation, and (c) rate the effectiveness of each response option. This variety of responses allowed us to experiment with many alternative methods for scoring the SJT items. The SJT is included in Appendix J.

Step 5: Scoring key development. In addition to the cadet ratings of response option effectiveness, a group of 10 cadre officers from the ROTC units included in this project provided effectiveness ratings for the SJT to ensure its appropriateness for the ROTC and to provide an alternative source of SME ratings to be used for scoring the SJT. The cadre officers were 90% male, came from different universities and services (4 Air Force, 4 Army, 2 Navy), and held a variety of officer ranks. After examining the data, a male Air Force CPT and a male Army MAJ were dropped from this group. The former exhibited poor agreement with the other officers in the sample, while the latter did not complete 64% of the ratings, and those he did complete exhibited poor agreement with the other officers in the sample.

Four alternative scoring keys were developed for the SJT based on different SME groups: (a) *Cadre Key* ($N = 8$), (b) *Cadet Key* ($N = 15$), (c) *Combined Cadre + Cadet Key* ($N = 23$), and (d) a *Consensus-Based Key* ($N = 153$). The latter consensus-based key is based on an approach discussed by Legree et al. (2005), which suggests that aggregating the responses of examinees may be advantageous for domains lacking certified experts and where objective knowledge is ill-specified. Mean effectiveness ratings were calculated and assigned to each response option. Because these effectiveness ratings differed across SME groups, four different scoring keys were created, and four sets of scores were calculated for subjects. A score for each item was computed by subtracting the mean effectiveness rating for the response chosen as least effective from the mean effectiveness rating for the response chosen as most effective. For example, if an individual rated response A the most effective and C the least effective, and response A had a

mean effectiveness rating of 5.0 and response C had a mean effectiveness rating of 3.5, then the individual's score for that item would be 1.5. Analyses conducted to evaluate the alternative scoring keys are detailed in the Results section.

Past Behavior Record

The *Past Behavior Record* (PBR) was developed for this research and measures skills relevant to each of the five target performance dimensions. We defined skill as the extent to which a person is actually able to perform a particular behavior relevant to a targeted performance dimension. This is distinguished from the actual performance of the behavior because it does not include the motivation component that determines whether a person will actually do what he or she is able to do. For example, a cadet may possess the skill necessary to cooperate with others, but could exhibit lower performance on that dimension if he or she is infrequently motivated to do so. We measured skill relevant to the targeted performance dimensions with a past behavior record. This is similar to a behavior description interview (Janz, Hellervik, & Gilmore, 1986), but in a written format, making it more like an accomplishment record (Hough, 1984). Using a highly structured format to minimize the possible confounding effect of writing ability, cadets described a recent situation they experienced that elicited behavior relevant to the performance dimension of interest, the behavior they exhibited, and the outcome of their behavior. Trained raters used standardized rating scales to evaluate the level of skill the behavior represented. By allowing respondents to describe their best example of behavior relevant to a performance dimension, we were able to assess the extent to which the person exhibited the behavior irrespective of the extent to which they typically exhibit the behavior.

We used a similar methodology to develop the PBR that we have used successfully in the past to develop accomplishment records (e.g., Bruskiewicz, Johnson, Lammlein, & Carter, 2001). First, we created a form similar to the example form provided by Hough (1984; p. 137), as well as forms that are typically used to record responses to behavior description interviews. At the top of the page we provided the target dimension name and definition, including a list of behaviors that were relevant to the dimension. The form asked the respondent to describe (a) a situation from the respondent's recent past (preferably ROTC-related) that required the respondent to exhibit behavior relevant to the target dimension, (b) the action taken by the respondent in response to the situation, and (c) the outcome or result of the behavior. Specific probes within each of these three domains (situation-behavior-outcome) were included to keep respondents focused on only the information required. The PBR is included in Appendix K.

Next, we conducted two workshops involving 12 cadets and midshipmen of varying levels of experience to collect examples of past behavior. We asked participants to describe one or two ROTC-relevant behavioral examples from their own past for each dimension using the PBR form. By restricting behaviors to ROTC situations and including cadets with varying levels of experience, we obtained a set of behaviors that varied in their level of effectiveness. These statements were typed and edited for grammar and clarity.

Third, we conducted two workshops involving 10 fourth-year cadets and midshipmen in which we asked the participants to rate each behavioral example obtained in the previous

workshop on its level of effectiveness. We also asked why each rating was made (i.e., what aspect of the behavior made it especially effective, ineffective, or moderately effective?). Following the workshop, we computed the mean effectiveness rating for each example and ordered them within dimension according to effectiveness. Two PDRI psychologists then induced the principles underlying the rating process by identifying the underlying themes that examples had in common and that distinguished between high, medium, and low levels of effectiveness. They used these principles and the information provided by workshop participants to develop rating scales for each dimension that contained behavioral statements describing high, medium, and low levels of effectiveness for each facet of the dimension. Along with instructions for making ratings, these rating scales constituted the Evaluation Guide that was used by judges to evaluate cadets' PBR responses.

Two PBR scoring guides were developed: (a) a conventional version, and (b) a multi-part anchored rating scale (MARS) version (Ferstl & Houston, 2006). Anchor facets were arranged differently across versions, but their content was identical. In the conventional version, anchor facets were grouped by level (*high, medium, low*). In MARS, they were grouped by facet type (*situation, behavior, and outcome*). The other difference between the versions is that MARS does not ask for an overall numerical rating; raters merely check the best-fitting anchor within each facet type. Raters were required to rate situation, behavior, and outcome using both formats so we could aggregate ratings across raters, regardless of the format used. The conventional evaluation guide is included in Appendix L and the MARS scoring guide is included in Appendix M.

PBR judges were advanced graduate students. Four judges were trained in the use of both scoring guides and how to rate PBR responses. We conducted pilot work in which judges rated a sample of the example behaviors. We evaluated the interrater reliability of these ratings and their correspondence to ratings made by advanced cadets to ensure that judges were able to make reliable and valid ratings. We revised the scales where necessary as a result of feedback from the pilot work.

After data collection, each judge used the MARS rating scales for half of the participants and the conventional rating scales for the other half. Thus, each participant's PBR was rated four times, twice using each type of rating scale.

Procedure

In-Person Predictor Battery

The first portion of the predictor battery was administered during the Fall 2006 semester at each university. Participants signed up for a 3-hour group session to complete the following instruments: (a) Wonderlic Personnel Test, (b) Citizenship Motives Scale, (c) Situational Judgment Test, (d) Motivational Trait Questionnaire, and (e) Past Behavior Record. Participants were paid \$50 for completion of the in-person predictor battery.

Online Predictor Battery

After completion of the in-person predictor battery, participants received instructions to complete six additional instruments online. Participants also received these instructions via email with direct links to the survey website. The online battery consisted of six instruments: (a) the IPIP Personality Inventory, (b) Work Habits Scale, (c) Experience Inventory, (d) Military Motives Scale, (e) Proactive Cognitions Scale, and (f) Action Control Scale. The estimated time to complete all six brief instruments was 90 minutes, and participants were asked to complete the instruments within two weeks. Non-respondents were given up to three reminder emails to complete all of the instruments. Among the 155 participants who completed the in-person battery, 136 (87.7%) completed all six of the online inventories. Participants were paid \$30 for completion of the online predictor battery.

Ongoing Online Assessment

After completion of the online predictor battery, participants entered a phase of ongoing survey administration. Approximately every month for four months, participants were asked to complete the 15-minute Self-Regulation Inventory online. At the point of each survey administration, participants were sent an email with a direct link to the survey. Non-respondents received a maximum of two reminders to complete the ongoing surveys. Response rates generally declined over the course of the four ongoing surveys: there was a 75.5% response rate for the first survey, a 65.8% response rate for the second survey, a 55.5% response rate for the third survey, and a 64.5% response rate for the fourth survey. Participants were paid \$8 for completing each of the online assessments, with an \$8 bonus for completing all four assessments (total of \$40 possible).

Performance Ratings Administration

In the middle of the spring 2007 semester, performance ratings were collected for each participant involved in the predictor administration. The performance ratings were completed by the participants' ROTC peers for research purposes only; no ROTC personnel were given access to the data. To identify appropriate raters, all participants were asked to indicate which of the other participants (within university) they were capable of rating (i.e., regular interaction with that person and adequate opportunities to observe their performance). Among the original 155 participants, 75 individuals served as raters, and an additional 15 ROTC cadets and midshipmen were recruited to serve exclusively as raters.

Raters were matched with up to four individuals from the list of participants they indicated they could rate. Rating assignments were emailed to raters, with a direct link to the online performance assessment. At the end of the online survey, raters indicated whether they were willing to rate additional participants. If they answered yes to this question, they were assigned up to four more of their peers to rate (depending on the participants they were capable of rating and the need for raters). Collection of performance ratings continued in this manner until all 155 original participants had at least one performance rating (mean = 3.27 raters/participant; SD = 1.00). Raters were paid \$10 for completing one performance rating and \$5 for each additional rating completed.

Results

Predictor Descriptive Statistics

Means, standard deviations, and alphas for all predictor variables are presented in Table 3. For the personality variables, Big Five factor scores were computed by calculating the mean item score across all facets composing each factor (Intellect was measured by a single facet). Emotional stability is composed of anxiety and anger. Extraversion is composed of friendliness, gregariousness, and assertiveness. Agreeableness is composed of trust and cooperation. Conscientiousness is composed of self-efficacy, dutifulness, dependability, and initiative. For the MTQ scales, personal mastery is composed of determination, desire to learn, and mastery goals. Competitive excellence is composed of other-referenced goals and competition seeking. Motivation anxiety is composed of worry, emotionality, and evaluation apprehension. Personality items were recoded where necessary so that higher scores meant the individual possesses more of the trait.

Because of the large number of variables, predictor intercorrelations are presented in the appendices. Appendix N presents intercorrelations between the predictor variables that are relevant for all performance dimensions. These variables include the WPT, personality scales, social insight, action control scales, job satisfaction, military values, and affective commitment. We measured both affective and continuance commitment, but continuance commitment was uncorrelated with all other variables in the investigation so we did not include this scale in any data analyses. Appendix O presents intercorrelations between dimension-specific predictors. These include experience, interests, citizenship motives, expectancy, efficacy, commitment, habits, PBR, SJT, and self-regulation.

Criterion Descriptive Statistics

We computed internal consistency reliabilities (alphas) for each performance dimension to ensure that each item contributed positively to the measurement of its intended dimension. One item from decision making/problem solving (item 6) was dropped because it was not highly correlated with the other items and its presence decreased alpha. Another item (item 7) was moved from decision making/problem solving to maintaining good working relationships because it decreased alpha for decision making/problem solving, increased alpha for maintaining good working relationships, and the content was better suited to maintaining good working relationships. The item content for all other dimensions remained as intended. To create performance dimension scale scores, we computed the mean of the items within each performance dimension. The mean rating for each ratee across raters was then computed to arrive at a single dimension score for each ratee. Descriptive statistics for performance rating scales are presented in Table 4. Intercorrelations between performance rating scales are presented in Table 5.

Table 3
Descriptive Statistics and Alphas for Predictor Variables

Variable	N	Mean	SD	Min	Max	Alpha
Wonderlic Personnel Test	155	27.08	5.12	13	39	—
Big 5: Emotional Stability	139	3.55	0.70	1.80	5.00	.91
Big 5: Extraversion	139	3.77	0.61	2.20	4.83	.94
Big 5: Agreeableness	139	3.53	0.63	1.60	4.95	.89
Big 5: Conscientiousness	139	4.08	0.38	2.65	4.89	.91
Big 5: Intellect	139	3.80	0.72	1.80	5.00	.89
Anxiety	139	2.50	0.76	1.00	4.50	.85
Anger	139	2.40	0.82	1.00	4.50	.90
Friendliness	139	3.84	0.76	1.40	5.00	.91
Gregariousness	139	3.59	0.75	1.60	5.00	.88
Assertiveness	139	3.89	0.61	2.40	5.00	.84
Trust	139	3.72	0.77	1.00	5.00	.91
Cooperation	139	3.35	0.69	1.50	4.90	.81
Self-Efficacy	138	4.25	0.48	2.60	5.00	.86
Dutifulness	139	4.31	0.45	2.57	5.00	.83
Dependability	139	3.96	0.53	2.62	5.00	.81
Initiative	139	3.71	0.53	1.44	4.89	.79
Cautiousness	139	3.41	0.56	2.10	4.80	.77
Hope/Optimism	138	3.98	0.62	2.25	5.00	.78
Valor/Bravery/Courage	139	3.79	0.55	2.60	5.00	.77
Situational Flexibility	139	3.18	0.54	1.83	4.50	.75
Conflict Resolution	139	3.34	0.61	1.83	4.75	.82
MTQ: Personal Mastery	155	4.49	0.49	3.06	5.85	.66
MTQ: Determination	155	4.74	0.48	3.20	6.00	.79
MTQ: Desire to Learn	155	4.88	0.51	3.30	6.00	.84
MTQ: Mastery Goals	155	3.98	0.78	1.44	5.78	.84
MTQ: Competitive Excellence	155	4.60	0.59	3.09	6.00	.64
MTQ: Other Referenced Goals	155	4.10	0.68	2.30	5.65	.88
MTQ: Competition Seeking	155	4.00	0.76	2.15	5.69	.87
MTQ: Motivation Anxiety	155	4.20	0.82	2.00	6.00	.82
MTQ: Worry	155	3.09	0.85	1.00	5.44	.83
MTQ: Emotionality	155	3.02	0.74	1.27	5.22	.83
MTQ: Eval. Apprehension	155	3.20	0.98	1.00	6.00	.79
MTQ: Failure Avoidance	155	2.66	1.04	1.00	5.83	.81
Social Insight	155	3.41	0.96	1.00	5.50	.83
ACS: Hesitation	155	2.82	0.65	1.46	5.00	.71
ACS: Preoccupation	139	3.44	0.70	1.44	5.00	.70
ACS: Volatility	141	5.33	2.14	0.00	8.00	.57
Job Satisfaction	141	5.30	2.12	0.00	8.00	.90
Military Values	141	4.62	1.41	1.00	6.00	.90
Affective Commitment	139	3.74	0.66	1.53	5.00	.78

(table continues)

Table 3 (continued)

Variable	N	Mean	SD	Min	Max	Alpha
Experience–Decision Making	138	3.61	0.41	2.13	4.00	.83
Experience–Work Relations	138	4.03	0.76	1.25	5.00	.81
Experience–Org Commitment	139	3.62	0.40	2.17	4.00	.78
Experience–Showing Initiative	139	3.57	0.36	2.11	4.00	.85
Experience–Adapting	139	3.68	0.36	2.17	4.00	.91
Interest in Decision Making	139	3.23	0.53	1.71	4.00	.79
Interest in Work Relationships	139	3.44	0.50	2.00	4.00	.81
Interest in Org Commitment	138	4.19	0.53	2.33	5.00	.85
Interest in Showing Initiative	138	4.36	0.49	3.00	5.00	.85
Interest in Adapting	137	4.48	0.53	3.00	5.00	.89
MGWR–Org Concern	137	4.08	0.60	1.86	5.00	.75
MGWR–Prosocial Values	137	4.14	0.63	2.29	5.00	.85
MGWR–Impress Management	155	4.08	0.46	2.90	5.00	.90
OC–Organizational Concern	155	3.95	0.61	1.90	5.00	.82
OC–Prosocial Values	155	2.73	0.92	1.00	4.67	.94
OC–Impression Management	155	4.00	0.57	2.40	5.00	.90
SI–Organizational Concern	155	3.48	0.93	1.00	5.00	.81
SI–Prosocial Values	154	2.78	0.96	1.00	5.00	.90
SI–Impression Management	155	4.05	0.59	1.90	5.00	.91
Decision Making–Expectancy	155	3.63	0.80	1.30	5.00	.92
Maintain Relations–Expectancy	155	2.66	1.01	1.00	4.89	.92
Org Commitment–Expectancy	138	4.48	0.62	1.00	5.00	.90
Showing Initiative–Expectancy	138	4.51	0.62	1.00	5.00	.91
Adapting–Expectancy	138	4.59	0.58	1.00	5.00	.94
Decision Making–Efficacy	138	4.41	0.66	1.14	5.00	.87
Working Relationships–Efficacy	138	4.51	0.64	1.00	5.00	.85
Org Commitment–Efficacy	138	4.50	0.51	1.50	5.00	.82
Showing Initiative–Efficacy	138	4.57	0.45	1.44	5.00	.85
Adapting–Efficacy	138	4.60	0.44	2.83	5.00	.91
Decision Making–Commitment	138	4.30	0.58	2.00	5.00	.84
Work Relations–Commitment	138	4.55	0.52	1.63	5.00	.83
Org Commitment–Commitment	138	4.50	0.44	3.00	5.00	.85
Showing Initiative–Commitment	138	4.57	0.43	2.78	5.00	.85
Adapting–Commitment	138	4.59	0.46	2.50	5.00	.94
Habits–Decision Making	138	4.23	0.59	2.29	5.00	.81
Habits–Working Relationship	136	4.52	0.57	1.13	5.00	.89
Habits–Org Commitment	135	5.58	0.98	1.50	7.00	.92
Habits–Showing Initiative	135	5.96	0.93	1.67	7.00	.91
Habits–Adaptive Performance	134	5.94	1.11	1.50	7.00	.93

(table continues)

Table 3 (continued)

Variable	N	Mean	SD	Min	Max	Alpha
PBR: Decision Making	134	5.51	1.19	1.43	7.00	—
PBR: Working Relationships	134	5.89	1.01	1.25	7.00	—
PBR: Org Commitment	154	2.46	0.42	1.00	3.00	—
PBR: Showing Initiative	153	2.60	0.42	1.00	3.00	—
PBR: Adapting	153	2.41	0.36	1.50	3.00	—
SJT-Decision Making	154	2.64	0.36	1.75	3.00	.60
SJT-Working Relationships	153	2.85	0.27	1.75	3.00	.60
SJT-Org Commitment	155	2.84	0.61	-1.33	3.76	.49
SJT-Showing Initiative	155	3.61	0.53	0.20	4.41	.39
SJT-Adapting	155	3.14	0.82	-2.48	4.07	.55
Self-reg: Decision Making T1	155	2.95	0.59	-0.63	3.80	.92
Self-reg: Decision Making T2	155	2.75	0.72	-1.84	3.73	.93
Self-reg: Decision Making T3	117	3.55	0.68	1.69	5.00	.95
Self-reg: Decision Making T4	101	3.79	0.69	2.00	5.00	.92
Self-reg: Working Relations T1	86	3.76	0.74	1.81	5.00	.93
Self-reg: Working Relations T2	100	3.75	0.66	1.88	5.00	.93
Self-reg: Working Relations T3	116	3.76	0.69	1.94	5.00	.95
Self-reg: Working Relations T4	101	3.87	0.65	2.13	5.00	.94
Self-reg: Org Commitment T1	86	3.86	0.72	1.88	5.00	.94
Self-reg: Org Commitment T2	100	3.81	0.71	1.88	5.00	.94
Self-reg: Org Commitment T3	116	3.76	0.73	1.63	5.00	.95
Self-reg: Org Commitment T4	102	3.86	0.70	1.94	5.00	.94
Self-reg: Showing Initiative T1	86	3.89	0.71	1.81	5.00	.95
Self-reg: Showing Initiative T2	99	3.85	0.71	1.88	5.00	.95
Self-reg: Showing Initiative T3	115	3.81	0.74	1.75	5.00	.95
Self-reg: Showing Initiative T4	101	3.92	0.70	1.69	5.00	.92
Self-reg: Adapting T1	86	3.89	0.73	1.44	5.00	.93
Self-reg: Adapting T2	99	3.90	0.63	2.00	5.00	.94
Self-reg: Adapting T3	116	3.74	0.75	1.73	5.00	.94
Self-reg: Adapting T4	102	3.81	0.75	1.69	5.00	.94

Table 4
Descriptive Statistics for Performance Rating Scales

Variable	Mean	SD	Min	Max
Decision making/problem solving	3.69	0.61	2.00	5.00
Maintaining good working relationships	3.79	0.62	2.27	5.00
Organizational commitment	3.84	0.63	1.70	5.00
Showing initiative	3.48	0.69	1.29	5.00
Adapting to changing/uncertain situations	3.65	0.61	2.21	5.00
Overall performance	3.72	0.80	1.42	5.00

Note. *N* = 155.

Table 5
Intercorrelations Between Performance Rating Scales

Variable	1	2	3	4	5	6
1. Decision making/problem solving	1.00					
2. Maintaining good working relationships	.82	1.00				
3. Organizational commitment	.85	.82	1.00			
4. Showing initiative	.81	.77	.83	1.00		
5. Adapting to changing/uncertain situations	.89	.81	.84	.81	1.00	
6. Overall performance	.87	.83	.91	.81	.87	1.00

Note. $N = 155$. All correlations are significant at $p < .001$.

We used generalizability theory to estimate the interrater reliability of each performance dimension scale score. The design was $(r : p) \times i$, or raters nested within ratees and crossed with items. This design was used because each ratee was rated by a unique set of raters on the same set of items. We were most interested in the consistency of the relative ranking of persons across conditions, so we computed G-coefficients based on a relative definition of error rather than an absolute definition of error (DeShon, 2002). The G-coefficients were .63 for decision making/problem solving, .63 for maintaining good working relationships, .64 for organizational commitment, .60 for showing initiative, .58 for adapting to uncertain or changing situations, and .70 for overall performance.

Because of the large number of variables, correlations between predictors and criteria are presented in the appendices. Correlations between variables that are relevant to decision making/problem solving are presented in Appendix P. Correlations between variables that are relevant to maintaining good working relationships are presented in Appendix Q. Correlations between variables that are relevant to organizational commitment are presented in Appendix R. Correlations between variables that are relevant to showing initiative are presented in Appendix S. Correlations between variables that are relevant to adapting to uncertain or changing situations are presented in Appendix T.

Evaluation of Experimental Measures

In this section, we discuss the scoring procedures and present construct validity evidence for the experimental measures created for this research. These include the SJT, the PBR, the Work Habits Scale, and the Self-Regulation Inventory. Construct validity evidence is based on correlations with theoretically relevant constructs and lack of correlation with irrelevant constructs.

Situational Judgment Test

Recall that we had four alternative sources of effectiveness ratings for creating the scoring key: (a) cadre key, (b) cadet key, (c) combined cadre + cadet key, and (d) consensus-based key. To evaluate the effectiveness of the alternative keys, we computed internal consistency reliabilities and validities for each scale as scored using the different keys. SJTs

typically have low internal consistency, primarily because the complexity of situations and responses make them a function of multiple traits and abilities (Chan & Schmitt, 2005). Nevertheless, we wanted to maximize internal consistency because we needed to create indicator variables from the SJT to measure the knowledge construct in our structural equation models. If the indicators are not correlated with each other, measurement of the construct would be compromised.

We computed SJT scale score using each scoring key, computed alphas, and correlated the scores with their target performance dimensions. Results are displayed in Table 6. Note that there were no cadet ratings of effectiveness for two items because they were added to the item pool after the cadet ratings were collected. Also, one item was excluded from the adaptive performance scale because it had a large detrimental effect on both reliability and validity.

Several things are noteworthy from this table. First, validities were low across all scoring keys for organizational commitment and showing initiative. Second, maintaining good working relationships has about the same level of validity across all scoring keys. Third, the validity for decision making/problem solving is much lower for the consensus-based key than for the others. Fourth, validity for adaptive performance is much higher for the cadre key than for the others. Finally, alphas were quite low, and were not consistently higher for one scoring key than another. We chose the cadre scoring key because of the superior validity for adaptive performance and decision making/problem solving, but that still left a problem of low alphas.

The easiest way to increase internal consistency is to increase the number of construct-relevant items in the scale. We were limited in the number of items we could include targeting each performance dimension because of testing time, but one way to increase the number of items is to allow item overlap across dimensions. Our analyses were conducted within performance dimension, so there was no need to have unique items for each SJT scale.

We decided to use a construct-oriented approach that takes advantage of the large amount of data available to us to choose items for each SJT scale. We used the following sources of information to create SJT scales: (a) construct relevance ratings made by IO psychologists, (b) correlations with other theoretically relevant predictors, and (c) internal consistency. The potential pool of items for a given scale was the items with mean construct relevance ratings of 3.00 or higher, regardless of what the mean relevance rating was for any other performance dimension. We computed correlations between each item score and other variables that we expected to be related to the SJT score. For example, items relevant to decision making/problem solving were expected to be primarily correlated with the WPT, the PBR, and experience, with other possible correlations with the self-efficacy and goal commitment proactive cognitions scales and the personality traits of emotional stability, intellectance, assertiveness, and generalized self-efficacy. Items that showed consistent low or negative correlations with these variables were considered poor measures of the construct and were removed from consideration.

Table 6

Comparison of SJT Scoring Keys

Dimension	Consensus-Based Scoring (<i>N</i> = 153)		Combined – Cadet + Cadre (<i>N</i> = 23)		Cadet (<i>N</i> = 15)		Cadre (<i>N</i> = 8)	
	Alpha	Validity	Alpha	Validity	Alpha	Validity	Alpha	Validity
DMPS	.30	.05	.24	.11	.22 ^b	.11	.22	.12
MGWR	.50	.16	.48	.16	.47	.16	.48	.15
OC	.50	.06	.50	.03	.46	.04	.47	.02
SI	.44	-.06	.37	-.04	.33	-.04	.38	-.03
AUCS ^a	.25	.08	.20	.08	.09 ^b	-.02	.37	.18

Note. DMPS = Decision Making/Problem Solving, MGWR = Maintaining Good Working Relationships, OC = Organizational Commitment, SI = Showing Initiative, AUCS = Adapting to Uncertain or Changing Situations. Validity is the Pearson correlation of the SJT-based dimension with the analogous dimension in the performance rating instrument; ^aAUCS scales excluded one item that decreased reliability and validity; ^bCadet effectiveness ratings were not available for one item in this dimension.

Alphas were computed for scales composed of the remaining items. Items that decreased alpha were dropped unless they had very strong construct validity. Table 7 displays the alphas and validities for the revised SJT scales using the cadre scoring key. Alpha increased considerably for decision making/problem solving, which originally had the lowest alpha of all the scales. Alphas also increased for maintaining good working relationships and adaptive performance. Alphas were unchanged for organizational commitment and showing initiative. Validities for these dimensions increased but were still at a low level. Validity increased substantially for decision making/problem solving and slightly for maintaining good working relationships, but decreased very slightly for adaptive performance. We concluded that the construct-oriented approach we employed is a useful strategy for constructing SJT scales.

Table 7

Alphas and Validities for SJT Scales Developed Using Construct-Oriented Approach

Scale	Items	Alpha	Validity
Decision making/problem solving	13	.60	.18*
Maintaining good working relationships	14	.60	.18*
Organizational commitment	6	.49	.08
Showing initiative	8	.39	.03
Adapting to uncertain/changing situations	8	.55	.17*

Note. $N = 155$. * $p < .05$.

Past Behavior Record

Recall that we created two different scales for scoring the PBR: (a) a conventional behavior summary scale, and (b) a multi-part anchored rating scale (MARS). The purpose of creating these two scales was to compare different types of rating scales, which will be the focus of a later project. For this research, we needed to determine what single score across rating scales would be used to operationalize skill with respect to each performance dimension. The conventional scale required the rater to make an overall rating in addition to ratings of the situation, behavior, and outcome. Correlations between these overall ratings and their target performance dimensions ranged from -.03 to .13, with none being significant. Examining the correlations between the target performance dimensions and the situation, behavior, and outcome ratings showed that many of these relationships were significant. This suggests that the clinical method these raters used to arrive at an overall judgment was not a particularly valid procedure.

The MARS scale requires raters to make only situation, behavior, and outcome ratings and then these ratings are combined using a standardized scoring method to create the overall score. We found that the standard scoring procedure typically used with MARS (giving behavior twice the weight as situation or outcome; Ferstl & Houston, 2006) did not apply very well to each of the performance dimensions included in this research. For some dimensions, behavior was the primary predictor of performance, but for other dimensions, situation was a better predictor. In some cases, the rated difficulty of the situation on the PBR was highly negatively correlated with performance on the dimension, which was not expected. Ordinarily, successfully overcoming a more difficult situation would indicate a higher level of skill, so one would expect

a positive correlation between situation difficulty and performance. As an example of this unexpected result, difficulty of the situation was negatively correlated with organizational commitment performance. Examining the situation question on the PBR form, we determined that this made sense because someone who was very committed would tend not to encounter situations in which it is difficult to maintain his or her commitment.

We also conducted multiple regression analyses to create a scoring algorithm for each dimension, in which the algorithm was determined based on the mean ratings for two raters and cross-validated against the mean ratings for the other two raters. This yielded valid scoring algorithms, but we did not believe this was giving us what we needed for this research. The goal was to measure skill relevant to each performance dimension, not to predict each performance dimension. We had to allow for the possibility that skill may not be a relevant construct for a performance dimension like organizational commitment, which was only predictable by the difficulty of the situation. The difficulty of the situation is not a measure of skill regardless of how strong the correlation is with performance. Therefore, we determined that the best measure of skill was the behavior exhibited and used the mean behavior rating across all four raters as the measure of skill for this research.

We computed interrater reliability using ICC(2, k), which assesses the level of absolute agreement for a mean of the ratings across raters (Shrout & Fleiss, 1979). Interrater reliabilities were .75 for decision making/problem solving, .78 for maintaining good working relationships, .63 for organizational commitment, .70 for showing initiative, and .66 for adapting to uncertain or changing situations.

Self-Regulation Inventory

The Self-Regulation Inventory (SRI) was designed to measure the extent to which participants had difficulty in implementing their intention to behave in a certain way. It consisted of 17 items that were applied to each of the five performance dimensions. The SRI was administered four times over the course of four months, with the idea that multiple measurements would capture the typical level of self-regulation a participant experienced over the evaluation period.

Out of the 155 cadets and midshipmen who completed the in-person test battery, 31 did not respond to any of the invitations to complete the SRI. Twelve participants completed it once, 14 completed it twice, 28 completed it three times, and 70 completed all four surveys. The mean number of surveys completed was 2.61 (SD = 1.59). Table 8 shows correlations between performance and mean SRI scores across administrations for each performance dimension for participants who completed all four surveys, then when adding participants who completed only three, then when adding participants who completed only two, and finally for all participants. As expected, correlations decrease as participants are added for whom a smaller number of data points are available. This pattern is consistent up until only participants for whom data were available for all administrations were included, when correlations decreased. These results demonstrate that averaging across multiple measurements provides better prediction than using just a single administration of this type of survey.

Table 8

Correlations Between Performance and Self-Regulation When Participants Who Completed Different Numbers of Surveys Are Included in the Sample

Dimension	Number of Surveys Completed (<i>k</i>)			
	<i>k</i> = 4 (<i>N</i> = 70)	<i>k</i> ≥ 3 (<i>N</i> = 98)	<i>k</i> ≥ 2 (<i>N</i> = 112)	<i>k</i> ≥ 1 (<i>N</i> = 124)
Decision making/problem solving	.20	.25*	.24*	.19*
Maintaining good working relationships	.12	.21*	.18	.14
Organizational commitment	.19	.21*	.19*	.17
Showing initiative	.20	.26**	.20*	.15
Adapting to uncertain/changing situations	.17	.19	.17	.15

Note. **p* < .05. ***p* < .01.

Table 9 shows correlations between performance and self-regulation for each administration of the survey. Correlations tended to increase from Time 1 to Time 3, which would be expected because measurements that are more proximal to when performance was measured should be more related to performance. Correlations drop off substantially at Time 4, however, which is opposite of what would be expected. This probably explains why the correlations in Table 8 decrease when limited to those who completed all four administrations, because this would include everyone who completed the survey at Time 4. A possible explanation for the low correlations at Time 4 is that the administration of the SRI and the collection of the performance ratings occurred at approximately the same time. Perhaps many of the raters did not have the opportunity to observe the situations rated by the respondents because they occurred too recently.

Table 9

Correlations Between Performance and Self-Regulation for Each Survey Administration

Dimension	Survey Administration			
	1 (<i>N</i> = 117)	2 (<i>N</i> = 101)	3 (<i>N</i> = 86)	4 (<i>N</i> = 100)
Decision making/problem solving	.13	.26**	.32**	.11
Maintaining good working relationships	.02	.19	.22*	.15
Organizational commitment	.14	.13	.30**	.08
Showing initiative	.15	.20	.26*	.10
Adapting to uncertain/changing situations	.17	.10	.19	.15

Note. **p* < .05. ***p* < .01.

Table 9 shows that the SRI was a good predictor of performance, especially at Times 2 and 3. Additional construct validity evidence for the SRI comes from correlations with theoretically relevant predictors. The MTQ scales and the ACS scales should predict success at self-regulating. Table 10 presents correlations between these scales and the mean self-regulation score across administrations for each performance dimension.

Table 10

Correlations Between Mean Self-Regulation Scores and Theoretically Relevant Predictors

Variable	Self-Regulation Scale (Mean Across Administrations)				
	DMPS (N = 124)	MGWR (N = 123)	OC (N = 122)	SI (N = 122)	AUCS (N = 122)
Motivational Trait					
Personal Mastery	.31***	.25**	.30***	.32***	.31***
Determination	.43***	.37***	.41***	.41***	.47***
Desire to Learn	.12	.09	.12	.15	.12
Mastery Goals	.26**	.19*	.25**	.26**	.23*
Competitive Excellence	-.10	-.18*	-.09	-.10	-.18*
Other-Referenced Goals	-.26**	-.29***	-.23**	-.25**	-.31***
Competition Seeking	.07	-.03	.06	.07	-.02
Motivation Anxiety	-.41***	-.39***	-.44***	-.45***	-.44***
Worry	-.38***	-.39***	-.43***	-.43***	-.42***
Emotionality	-.38***	-.37***	-.37***	-.42***	-.39***
Evaluation Apprehension	-.30***	-.26**	-.35***	-.32***	-.35***
Failure Aversion	-.37***	-.38***	-.43***	-.43***	-.50***
Action Control Scale					
Hesitation	.34***	.27**	.32***	.34***	.35***
Preoccupation	.39***	.46***	.39***	.40***	.47***
Volatility	.11	.10	.11	.17	.17

Note. DMPS = Decision Making/Problem Solving, MGWR = Maintaining Good Working Relationships, OC = Organizational Commitment, SI = Showing Initiative, AUCS = Adapting to Uncertain or Changing Situations. * $p < .05$. ** $p < .01$. *** $p < .001$.

Many of the MTQ and ACS scales had very strong and significant correlations with the self-regulation scales. Note that the ACS scales are scored such that high scores mean the respondent has more action control and is better able to self-regulate, so these correlations are in the hypothesized direction. These correlations show that most theoretically relevant variables are highly correlated with the self-regulation scales, providing strong construct validity evidence for the SRI. Correlations between these theoretically relevant predictors and the self-regulation scales at each administration time can be found in Appendices P through T. The level of correlations across administrations was consistent across administrations, indicating that the SRI was equally effective as a measure of self-regulation success at each administration. This gives further evidence to the possibility that low correlations with performance at Time 4 are due to raters' inability to observe that performance rather than something different with the SRI at that administration.

Work Habits Scale

According to the Johnson (2003) model, work habits should be directly related to self-regulation and performance. Habits should be directly related to performance when performance is automatic, and should be related to self-regulation when habits interfere with successful performance. Another variable that should be related to habits is experience, because one prerequisite for a behavior becoming a habit is that it must be performed frequently. Table 11 presents correlations for habits with performance, self-regulation, and experience.

Table 11
Correlations for Habits with Performance, Self-Regulation, and Experience

Habits	Performance	Self-Regulation	Experience
Decision making/problem solving	-.06	.22*	.23**
Maintaining good working relationships	.04	.20*	.39***
Organizational commitment	.12	.13	.22*
Showing initiative	-.03	.17	.20*
Adapting to uncertain/changing situations	-.01	.28**	.25**

Note. Pairwise deletion of missing cases. *Ns* range from 118 to 135. * $p < .05$. ** $p < .01$. *** $p < .001$.

Habits were significantly correlated with experience for all dimensions. Habits were significantly correlated with self-regulation for only three dimensions, however, and were uncorrelated with performance for all dimensions. This calls the construct validity of the Work Habits Scale into question. To further explore the nature of the Work Habits Scale, we formulated hypotheses about the relationships between habits and interests, expectancies, self-efficacy, and goal commitment. We anticipated that interests would be good predictors of habits because people tend to make a habit out of doing things in which they are interested. Habits should predict expectancies because something becomes a habit when it is rewarded. Therefore, a person whose habits are consistent with good performance would understand that the behavior leads to desired outcomes. Habits should predict self-efficacy because a person knows that he or she is able to do what is habitual. Habits should predict goal commitment because when something is a habit it is very easy to be committed to do it. Table 12 presents correlations for habits with interests, expectancies, self-efficacy, and goal commitment. All of these correlations were significant and in the expected direction.

Table 12

Correlations for Habits with Interests, Expectancies, Self-Efficacy, and Goal Commitment

Habits	Interests	Expectancies	Self-Efficacy	Goal Commitment
Decision making/problem solving	.38***	.18*	.49***	.54***
Maintaining good working relationships	.51***	.26**	.57***	.51***
Organizational commitment	.48***	.42***	.55***	.53***
Showing initiative	.51***	.21*	.42***	.40***
Adapting to uncertain/changing situations	.36***	.20*	.47***	.37***

Note. Pairwise deletion of missing cases. *Ns* range from 130 to 134. * $p < .05$. ** $p < .01$. *** $p < .001$.

These results provide construct validity evidence for the Work Habits Scale. It may be that the kinds of behaviors assessed in this project are not likely to occur automatically, such that they would bypass the motivation component. This pattern of correlations clearly shows that habits are not direct determinants of performance on these dimensions, but may have an influence on motivation to perform these behaviors. Habits may be more likely to have a direct effect when the measurement of performance is on simpler or more specific behaviors in specific situations.

Importance of Performance Dimensions to Construct Domain

We wanted to statistically determine whether the five performance dimensions chosen for this research were meaningful in describing ROTC cadet/midshipman performance. Model testing would be irrelevant for a performance dimension that was not an important part of the performance domain. We used two methods to test the importance of each performance dimension: (a) testing the unique contribution to ratings of overall performance, and (b) testing the relative importance of each dimension to ratings of overall performance.

Unique Contribution to Overall Performance

One way to demonstrate that each performance dimension is an important part of the ROTC cadet performance domain is testing whether each performance dimension contributes uniquely to ratings of overall job performance. Motowidlo and Van Scotter (1994), Van Scotter and Motowidlo (1996), and Conway (1999) used this approach to distinguish between task performance and citizenship performance. Because adapting to uncertain or changing situations also is considered to be conceptually distinct from task and citizenship performance (Campbell, 1999; Hesketh & Neal, 1999; Johnson, 2003), we expected that each performance dimension would contribute unique variance to ratings of overall performance.

To control for halo when evaluating the contribution of task and citizenship performance to overall performance, Motowidlo and Van Scotter (1994) and Van Scotter and Motowidlo

(1996) had a different rater rate each performance dimension and overall performance. We used a similar procedure, but there were not enough raters to have a separate rater for each performance dimension. Therefore, we used a hierarchical regression procedure to determine if the target performance dimension contributed significantly to the prediction of overall performance beyond the remaining dimensions. In Step 1, all performance dimensions except the target dimension, as rated by a single rater (e.g., Rater 1), were entered. The target dimension, as rated by another rater (e.g., Rater 2), was entered in Step 2. Overall performance was rated by the third rater (e.g., Rater 3). Unlike the Motowidlo and Van Scotter studies, all raters rated all dimensions in this project so there were six different combinations of rater assignments. Rather than choosing one combination, we computed the correlation matrices for all combinations, computed the mean correlations, and used the mean correlation matrix to perform the hierarchical regression analysis. This was done five times, once for each performance dimension as the target dimension.

Results are presented in Table 13. Each performance dimension contributed significant variance beyond the other performance dimensions when predicting overall performance, supporting the hypothesis that each performance dimension measured a unique aspect of the performance domain.

Relative Importance to Overall Performance

We expected that each performance dimension would be a relatively important contributor to the evaluation of overall performance when other performance dimensions were included in the regression model. To evaluate the relative importance of performance dimensions, a multiple regression analysis was conducted with all performance dimensions entered simultaneously and overall performance as the dependent variable. Because regression coefficients are not interpretable as measures of relative importance when independent variables are highly correlated (Darlington, 1968), a relative weight analysis (Johnson, 2000) was conducted. Relative weight analysis is a procedure for quantifying the relative importance of predictor variables in multiple regressions. Relative weights reflect the proportionate contribution each predictor makes to R^2 , considering both its unique contribution and its contribution when combined with other variables. Relative weights better reflect the manner by which raters weight and combine information to arrive at an overall performance judgment, because the variance explained is distributed more proportionately among the predictors. Johnson (2001) used this procedure to demonstrate the relative importance of specific task and citizenship performance dimensions to evaluations of overall performance. Relative weights sum to R^2 (just as squared standardized regression coefficients do when predictors are uncorrelated), so they are expressed as percentages of the predictable variance to enhance interpretation. Because they are interpretable when predictors are highly intercorrelated, we used the correlation matrix in Table 5 to conduct the analysis.

Table 13
Hierarchical Regression Results When Predicting Overall Performance

Decision making/problem solving					
Step	Variables entered	R^2	ΔR^2	t	p
1	AUCS, MGWR, OC, SI	.240			
2	DMPS	.294	.054	2.87	.005
Maintaining good working relationships					
Step	Variables entered	R^2	ΔR^2	t	p
1	DMPS, MGWR, OC, SI	.225			
2	AUCS	.295	.070	3.27	.001
Organizational commitment					
Step	Variables entered	R^2	ΔR^2	t	p
1	DMPS, MGWR, OC, SI	.222			
2	AUCS	.303	.081	3.53	.001
Showing initiative					
Step	Variables entered	R^2	ΔR^2	t	p
1	AUCS, MGWR, OC, SI	.240			
2	DMPS	.290	.050	2.76	.007
Adapting to uncertain or changing situations					
Step	Variables entered	R^2	ΔR^2	t	p
1	DMPS, MGWR, OC, SI	.240			
2	AUCS	.291	.051	2.78	.006

Note. $N = 114$. Regressions were conducted on mean correlation matrices in which all possible three-rater combinations were averaged. Rater 1 rated the performance dimensions entered in Step 1; Rater 2 rated the performance dimension added in Step 2; Rater 3 rated overall performance.

Relative weights are presented in Table 14. Each performance dimension contributed a substantial amount to the prediction of overall performance, indicating that raters tend to consider performance on all five dimensions when evaluating overall performance. The most important dimension was organizational commitment, accounting for 24.7% of the predictable variance. Adapting to uncertain or changing situations was the next most important at 20.5%. Therefore, the hypothesis that each performance dimension would be a relatively important predictor of overall performance ratings was supported.

Table 14

Relative Weight Analysis Results When Predicting Overall Performance

Variable	Relative Weight	% of R^2
Decision making/problem solving	.174	20.0%
Maintaining good working relationships	.159	18.2%
Organizational commitment	.216	24.7%
Showing initiative	.145	16.5%
Adapting to uncertain/changing situations	.180	20.5%

Note. $N = 155$. $R^2 = .874$.

Formulation of Structural Equation Models

Structural equation models were tested using SPSS Amos 7.0. The same general procedure was used to build and test models for each performance dimension. We describe this general procedure in the following sections, and then present the specific results for each performance dimension.

Identifying Constructs to Include in Each Model

Because of the large number of indirect performance determinants (i.e., exogenous variables) included in this research, it would be impossible to include all potentially relevant variables in a model. Jackson (2003) indicated that the sample size necessary in structural equation modeling is related to the number of parameters estimated in the model. With a large number of parameter estimates, our sample size would be too small to have confidence in the results. Even with a larger sample size, the model tested would be prohibitively complex and unlikely to cross validate in another sample. To minimize the number of parameters to be estimated and ensure that only relevant variables were included in structural equation models, we examined the correlation matrix between indirect performance determinants (i.e., measures of personality, social intelligence, action control, experience, and general cognitive ability) and each performance dimension. Because the general model to be tested posited that the relationship between indirect performance determinants and job performance is mediated by knowledge, skill, habits, and the different components of motivation, we excluded measures of indirect performance determinants that did not have a relationship with any performance dimension. It would be meaningless to test a mediating model for variables that are not correlated with performance. We sought to explain relationships between variables with a mediating model, so we included only indirect performance determinants that had a significant relationship with performance (with two exceptions, discussed in the sections describing each model tested).

After identifying indirect performance determinants that are related to the performance dimension of interest, we chose three or four to include in the model. This choice was based on conceptual relevance to the performance dimension and overlap with other potential variables. All models included measures of the mediating variables included in the Johnson (2003) model (see Figure 1). How these constructs were operationalized is described in the following section.

Creating Indicators for Latent Variables

Each construct is measured by a set of observed variables known as indicators. When the construct is by definition composed of more specific constructs for which measures are available, those specific construct measures were used as the indicator variables. For example, the indicators for the Agreeableness construct were the measures of trust and cooperation. The indicators for the Self-Regulation construct were the measures of self-regulation at Time 1, Time 2, Time 3, and Time 4.

When a construct is not defined by a more specific construct, individual items could be used as indicators. This would create a very large number of parameters to be estimated, however, making it almost impossible to fit an adequate measurement model. According to Landis, Beal, and Tesluk (2000), creating composites of indicator variables results in better model fit than using item-level data and reduces the number of parameters estimated. There are many different ways to create composite indicator variables. Three potential methods of creating composites for indicators are by assigning items to composites (a) randomly, (b) based on their intercorrelations, or (c) based on their factor loadings when a single factor is extracted. In a Monte Carlo study, Landis et al. found that all three methods provided equally good model fit and parameter estimates.

We used the single-factor method to create composite indicator variables. In the single-factor method, a principal components analysis is conducted on all items within the scale, extracting one factor. If two-item composites are desired, the first composite is created by pairing the item with the highest loading on the factor with the item with the lowest loading on the factor (Landis et al., 2000). This process is repeated with the remaining items until all items have been assigned to a composite. If a three-item composite is created, an item from the middle of the factor loading distribution is added to the first two items. If a four-item composite is created, the items with the two highest loadings are combined with the items with the two lowest loadings. When using this procedure, we created three indicator variable composites for each construct.

The WPT score is not amenable to breaking into more than one element, so we used the WPT as a single indicator of cognitive ability. Amos has no way of estimating the error variance when there is only one indicator, so we provided Amos with an estimate of the error variance using the following formula:

$$\sigma_e^2 = \sigma^2(1 - r_{xx}) \quad (1)$$

where σ^2 is the variance of the WPT and r_{xx} is its reliability. The WPT manual reports several reliability estimates. We chose the Kuder-Richardson 20 value of .88 because it represents internal consistency, which is most consistent with how Amos estimates error variance for latent variables with multiple indicators.

Table 15 lists the indicator variables for each construct that was included in any of the models.

Table 15

Indicator Variables for Each Construct Included in Structural Equation Models

Construct	Models	Indicators
Performance	All	Three indicators created from performance rating items
Knowledge	All	Three indicators created from SJT items
Skill	All except OC	Two indicators, each the mean of one rating from conventional scale and one rating from MARS scale
Self-Regulation	All	Self-regulation measure at Time 1, Time 2, Time 3, Time 4
Habits	All	Three indicators created from habit items
Expectancies	All	Three indicators created from expectancy items
Goal Commitment	DMPS, MGWR, AUCS	Three indicators created from goal commitment items
Military Motives	All	Job satisfaction, military values, affective commitment
Interests	All	Three indicators created from interest items
Experience	All	Three indicators created from experience items
Cognitive Ability	All	Wonderlic Personnel Test
Conscientiousness	DMPS, OC, SI	Self-efficacy, dutifulness, dependability, initiative
Emotional Stability	DMPS	Anxiety, anger
Intellectance	DMPS, SI, AUCS	Three indicators created from intellectance items
Agreeableness	MGWR	Trust, cooperation
Self-Efficacy	MGWR	Three indicators created from self-efficacy items
Social Insight	MGWR	Three indicators created from social insight items
Trust	OC, SI, AUCS	Three indicators created from trust items
Hope/Optimism	OC	Three indicators created from hope/optimism items
Extraversion	SI	Friendliness, gregariousness, assertiveness
Anxiety	AUCS	Three indicators created from anxiety items
Situational Flexibility	AUCS	Three indicators created from situational flexibility items

Note. The single-factor method was used to create indicator variable whenever composites were created from items. DMPS = Decision Making/Problem Solving; MGWR = Maintaining Good Working Relationships; OC = Organizational Commitment; SI = Showing Initiative; AUCS = Adapting to Uncertain or Changing Situations.

Relationships Between Indirect Performance Determinants and Mediating Variables

The Johnson (2003) model specifies the paths through which certain variables influence performance but does not address what specific indirect performance determinants influence each mediating variable. For example, the model specifies that military motives has a direct path to proactive cognitions (expectancies and goal commitment), and that personality influences these motives, but the specific personality traits that influence military motives are tangential to the model. To determine what paths involving indirect performance determinants should be

included in the path model beyond what are specified by the general model, we conducted multiple regression analyses using sample data to determine what the significant predictors of each variable are. Multiple regression was used to determine paths rather than simply adding a path wherever there was a significant correlation between variables to avoid superfluous paths and keep the number of parameters estimated to a minimum.

In conducting the regression analyses, the independent variables were limited to those variables that are theoretically related to the dependent variable. For example, the model predicts that military motives is related to self-regulation through proactive cognitions, so military motives was not included as an independent variable when self-regulation was the dependent variable. Variables with significant regression coefficients at $p < .10$ were given direct paths to the dependent variable in the structural equation model.

Based on multiple regression analyses, expectancies and goal commitment were included as measures of proactive cognitions, but self-efficacy was not. Our original intention was to include a proactive cognitions construct in each model, with expectancies, self-efficacy, and goal commitment as the indicators. This plan was abandoned because these variables exhibited differential relationships with other relevant variables. For example, expectancies and self-efficacy were both correlated with performance, but goal commitment was not. We therefore included these variables separately in regression analyses with self-regulation or performance as dependent variables and found that expectancies was a significant predictor within all performance dimensions and self-efficacy was never significant. The pattern of correlations suggested that goal commitment may mediate the relationship between expectancies and self-regulation for some performance dimensions. Goal commitment was a significant predictor of performance as a suppressor variable for some dimensions. Thus, expectancies and goal commitment were included as separate variables and self-efficacy was excluded.

Models Tested

We used a very structured approach to model testing to ensure that we were able to identify the best-fitting model without capitalizing on chance. We first tested the measurement model, which is the extent to which the observed variables adequately represent the latent constructs. We then tested two alternative a priori models, each of which represented a reasonable representation of the relationships between the latent variables. This approach was recommended by Millsap (2002). Model 1 was based on the original model, in which habits had direct paths to both performance and self-regulation. Model 2 was suggested by the correlations observed in the sample between habits and proactive cognitions (see Table 12). In models in which both expectancies and goal commitment were included, the path from habits to self-regulation was removed and a path from habits to goal commitment was included. In models in which only expectancies were included, the path from habits to self-regulation was removed and a path from habits to expectancies was included.

We then tested one or more post hoc models by making minor modifications to the best-fitting a priori model. Byrne (1998) stated that the post hoc addition or deletion of paths was a reasonable way to improve model fit for structural equation models, as long as any addition of paths was theoretically meaningful and kept to a minimum. We followed this step even if the a

priori model fit the data well because we did not want a model that (a) included superfluous paths, and/or (b) did not adequately explain all relationships between indirect determinants and performance.

The first modifications we made were eliminating paths with nonsignificant path coefficients. We considered a path coefficient to be significant if its p -value was less than .10. We used this cutoff so as not to remove any potentially relevant paths and because eliminating paths with coefficients that were significant at $p < .10$ always resulted in worse model fit. Nonsignificant paths were eliminated one at a time, starting with paths that were not central to the model. After eliminating noncentral paths, we eliminated any substantive paths that had nonsignificant path coefficients, starting with the smallest coefficient. This continued until (a) all nonsignificant paths were eliminated, or (b) model fit became significantly worse by eliminating paths.

After removing nonsignificant paths, we examined the remaining paths to determine if the model adequately explained relationships between indirect determinants and performance. In other words, if an indirect determinant was correlated with performance but there was no path remaining through which that variable could influence performance, the model did not adequately explain the data. We could not examine modification indices because in order for Amos to use pairwise deletion of missing values, it was necessary to estimate means and intercepts. When this is done, modification analyses cannot be computed. Therefore, the addition of paths was based on conceptual appropriateness. A direct path was added to the most conceptually appropriate direct determinant of performance. If this path was not significant, it was deleted and a path added to another direct determinant. If no paths through direct determinants were significant, we tried a direct path from the variable to performance. If that path was not significant, we concluded that the correlation between that variable and performance was due to relationships with other variables rather than a causal relationship.

Testing Model Fit

Overall Fit Statistics. A number of goodness of fit statistics are available to evaluate the fit of each model. We used four that we feel are most informative. Chi-square is a measure of the distance between the sample covariance matrix and the covariance matrix suggested by the model (Jöreskog & Sörbom, 1993). This index increases with sample size and is based on the assumption that the model holds exactly in the population. The assumption that the model holds exactly in the population may be unreasonable, so this is taken into account by Steiger's (1990) Root Mean Square Error of Approximation (RMSEA). RMSEA is really a test of whether the model fits the data reasonably well. According to Browne and Cudeck (1993), a RMSEA of .05 or less is an indication of close fit, and values as high as .08 are reasonable. More recently, Hu and Bentler (1998, 1999) recommended an RMSEA of .06 or less as an indication of close fit.

Bentler's (1990) Comparative Fit Index (CFI) compares the chi-square for the target model to the chi-square for a baseline (usually the null) model. CFI is relatively insensitive to sample size and has been shown to have desirable properties in terms of being sensitive to model misspecification (Lance & Vandenberg, 2002). Hu and Bentler (1998, 1999) recommended a CFI of at least .95 as an indication of close model fit.

Finally, the Expected Cross-Validation Index (ECVI) (Browne & Cudeck, 1989) is a measure of the discrepancy between the fitted covariance matrix in the data analyzed and the expected covariance matrix that would be obtained in another sample of equal size (Jöreskog & Sörbom, 1993). It has the property of decreasing only if additional paths substantially reduce the estimate of discrepancy, and increasing if superfluous paths are hypothesized. The best-fitting model among a set of alternatives is then the model at which ECVI is at its minimum.

Path Model Fit. In structural equation modeling, the structural model is a composite of the measurement model and the path model. The measurement model represents a set of observed variables that serve as indicators of a set of latent variables. The path model describes (usually causal) relationships between the latent variables. Because the primary objective of structural equation modeling is to test a specified path model, McDonald and Ho (2002) recommended separating the fit of the path model from the fit of the measurement model. They pointed out that the fit of the structural model can appear satisfactory because of a well-fitting measurement model, even when the paths specified in the path model are not correctly specified. Conversely, the path model may be correctly specified but a misspecified measurement model could make the entire structural model appear to be misspecified.

Using a sequential testing procedure suggested by Anderson and Gerbing (1988), McDonald and Ho (2002) demonstrated how chi-square and RMSEA can be calculated for the path model independent of the measurement model. Because chi-squares and degrees of freedom are additive for nested models, the chi-square for the path model is obtained by subtracting the chi-square for the measurement model from the chi-square for the structural model (and similarly for degrees of freedom). RMSEA, CFI, and ECVI can be computed based on these differences in chi-squares and degrees of freedom, as well as the number of distinct sample moments and the noncentrality parameter, which are provided in the Amos output.

We tested the path model independent of the measurement model for each of the five performance dimensions. In each case, the chi-square for the final model was nonsignificant, indicating that the hypothesis that the specified path model fits the data could not be rejected. In other words, the path model describing relationships between the latent variables provided a good fit to the data independent of the measurement model describing relationships between the observed variables and the latent variables.

Evaluation of Structural Equation Models

Decision Making/Problem Solving

In addition to cognitive ability and experience, we included conscientiousness, emotional stability, and intellectance as other indirect performance determinants in this model. Sample correlations between the variables included in this model are presented in Table 16. Figure 2 shows how the path model depicted in Figure 1 was translated into a testable model for the dimension of decision making/problem solving. For simplicity, the figure excludes measured variables, error variances, and correlations between exogenous variables. This figure depicts Model 1. To visualize Model 2, the path from work habits to self-regulation would be removed and replaced with a path from work habits to goal commitment.

Fit statistics for all models tested (i.e., measurement model, a priori models, post hoc models), including those for the path models independent of the measurement model, are presented in Table 17. When adding the path from work habits to goal commitment in Model 2, we also removed the paths from intellectance to goal commitment and from cognitive ability to goal commitment, because the regression analyses indicated that these variables did not contribute significantly beyond work habits. Model 2 fit significantly better than Model 1. Examining the fit statistics independent of the measurement model shows that the hypothesis that Model 2 does not fit the data could not be rejected ($p = .104$). All hypothesized direct paths to performance were significant, except work habits was a suppressor variable.

Table 16

Sample Correlations Between Variables Included in the Decision Making/Problem Solving Structural Model

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Performance	1.00													
2. Skill	.27***	1.00												
3. Knowledge	.18*	.20*	1.00											
4. Self-regulation	.18*	.18	.20*	1.00										
5. Work Habits	-.06	.08	.19*	.22*	1.00									
6. Expectancies	.28***	.21*	.18*	.20*	.18*	1.00								
7. Goal Commitment	-.04	.22**	.26**	.25**	.54***	.45***	1.00							
8. Interests	.01	-.10	.08	.21*	.38***	.28***	.44***	1.00						
9. Military Motives	.25**	.10	.16	.21*	.21*	.28***	.17*	.33***	1.00					
10. Emotional Stability	.19*	.23**	.15	.39***	.16	.19*	.05	.13	.17*	1.00				
11. Conscientiousness	.21*	.20*	.24**	.39***	.38***	.30***	.36***	.33***	.46***	.28***	1.00			
12. Intellectance	.23**	.18*	.37***	.29***	.29***	.28***	.38***	.32***	.19*	.35***	.36***	1.00		
13. Experience	.22**	.22**	.41***	.23**	.23**	.47***	.48***	.30***	.18*	-.01	.30***	.37***	1.00	
14. Cognitive Ability	.10	.07	.25**	.01	-.03	.03	-.01	-.01	-.05	.05	.00	.25**	.31***	1.00

Note. Pairwise deletion of missing cases. *N*s range from 121 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

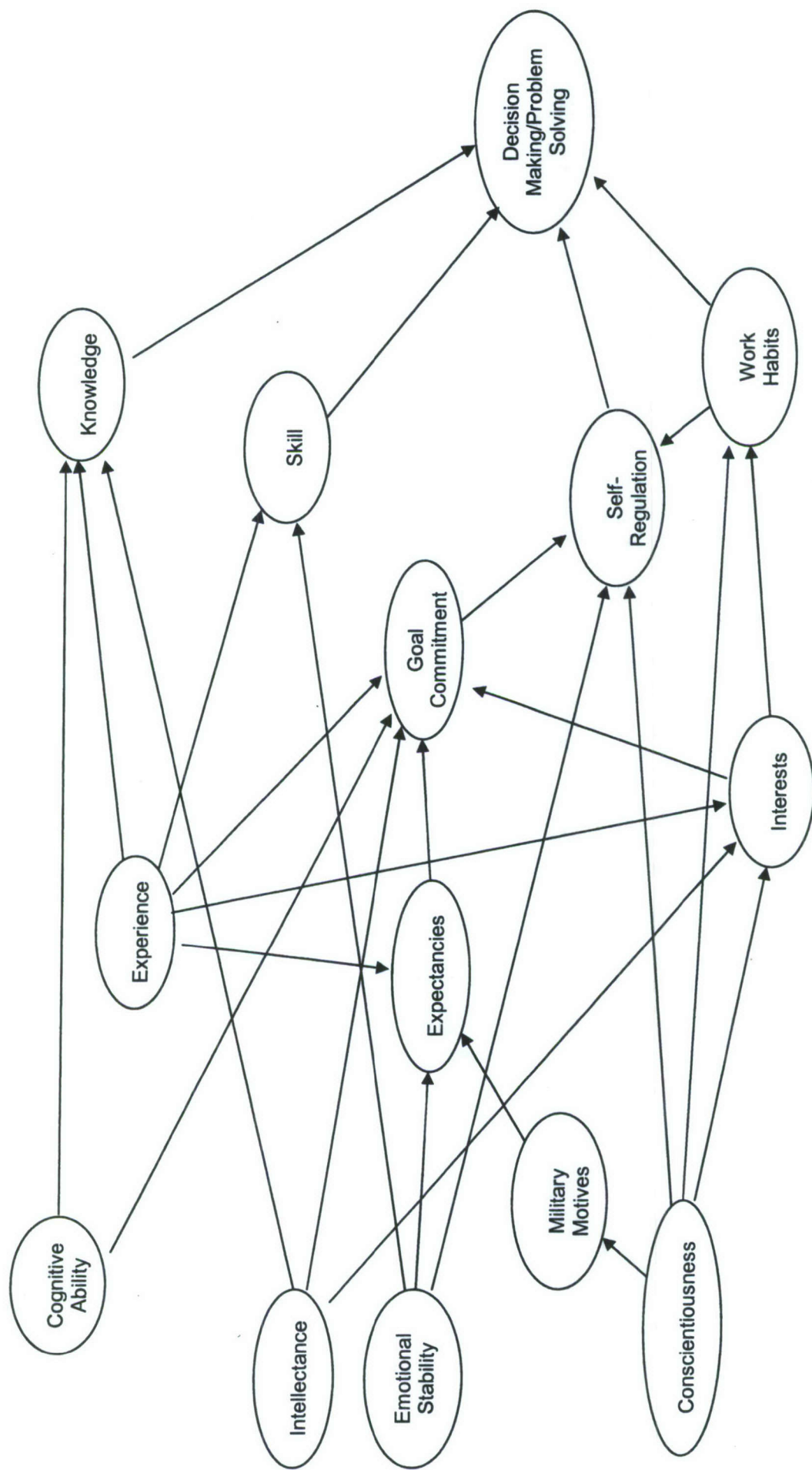


Figure 2. Operationalization of Johnson (2003) model for Decision Making/Problem Solving.

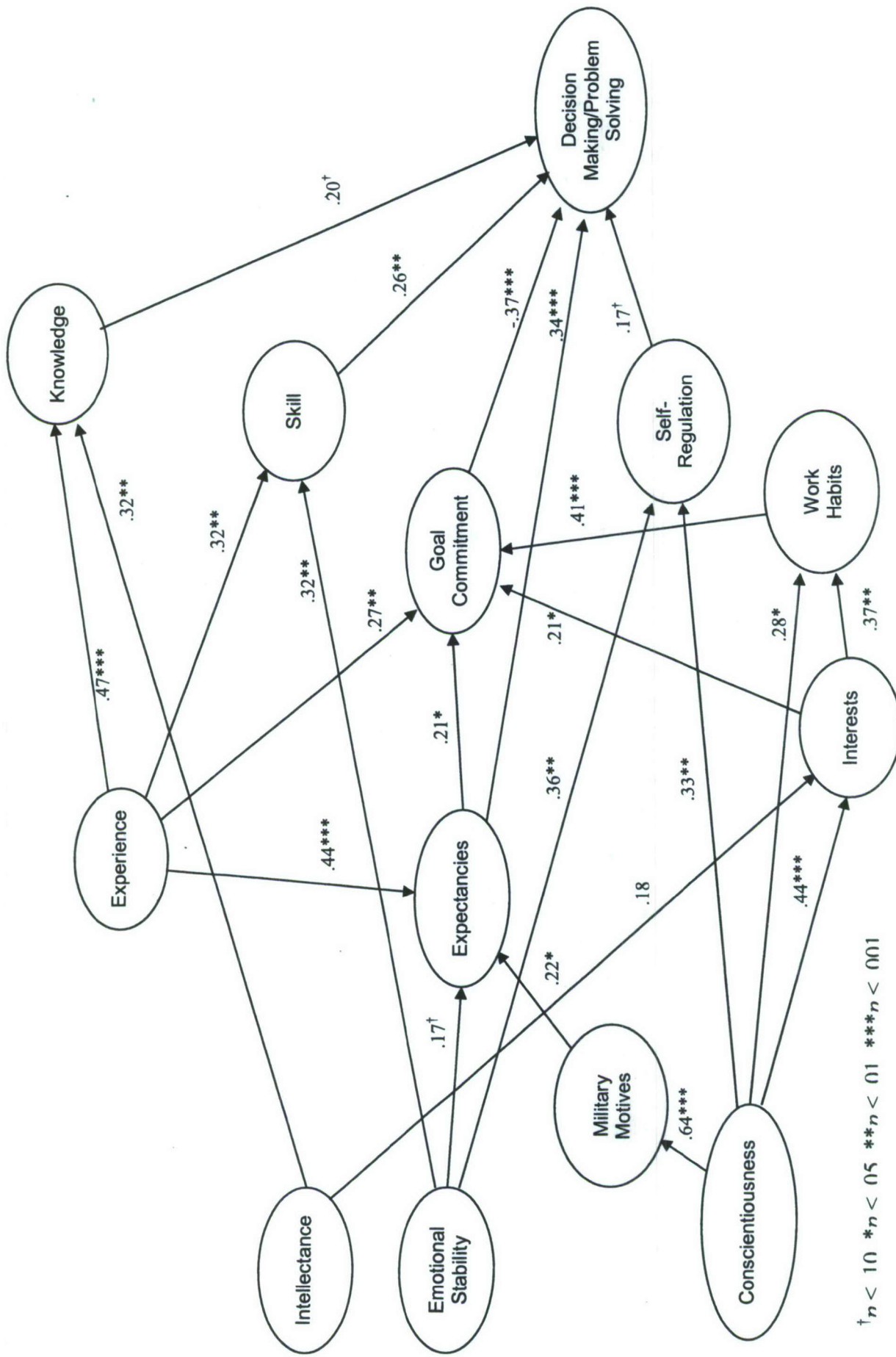
Table 17

Goodness of Fit Statistics for Decision Making/Problem Solving Models Tested

Model	df	χ^2	p-value	RMSEA	ECVI	CFI
Measurement model	674	1,066.1	.000	.061	9.34	.87
A priori models:						
Model 1	707	1,124.0	.000	.062	9.29	.86
Model 2	709	1,112.0	.000	.061	9.18	.87
Post hoc models:						
Model 3	707	1,097.2	.000	.060	9.11	.87
Model 4	711	1,101.6	.000	.060	9.09	.87
Path Model Independent of Measurement Model						
Model	df	χ^2	p-value	RMSEA	ECVI	CFI
A priori models:						
Model 1	33	57.9	.005	.070	11.12	.94
Model 2	35	45.9	.104	.045	11.01	.97
Post hoc models:						
Model 3	33	31.1	.562	—*	10.94	1.00
Model 4	37	35.4	.543	—*	10.92	1.00

Note. A priori models are described in text. $N = 155$. *RMSEA could not be computed because of a negative square root.

The problem with Model 2 was that the path from goal commitment to self-regulation was not significant, which meant that any path going through proactive cognitions did not reach performance that way. The regression analyses suggested that expectancies and goal commitment were directly related to performance, with goal commitment acting as a suppressor variable. In Model 3, we applied the paths suggested by the regression results for self-regulation and performance. This meant (a) deleting the path from goal commitment to self-regulation, (b) adding the path from experience to self-regulation, (c) adding paths from expectancies and goal commitment to performance, and (d) deleting the path from work habits to performance. Goal commitment took over the suppressor variable role played by work habits in the previous model. Model 3 fit significantly better than Model 2, and all paths to performance were significant. Model 4 removed four nonsignificant paths that were not central to the model. The final model is displayed in Figure 3, including standardized path coefficients.



† $n < 10$ * $n < .05$ ** $n < .01$ *** $n < .001$

Figure 3. Final performance prediction model for Decision Making/Problem Solving.

There are two meaningful differences between the final model presented in Figure 3 and the original model proposed in Figure 2. First, both proactive cognitions and self-regulation have direct effects on performance, rather than proactive cognitions having their effect through self-regulation. This makes sense, because many intentions may not require active self-regulatory strategies to enact them. Thus, self-regulation is a direct determinant but not necessarily at all times. The second difference is the relationships involving work habits. Rather than influencing both self-regulation and performance directly, work habits influence performance through goal commitment. Those whose work habits facilitate the performance of behavior relevant to decision making/problem solving tend to be more committed to performing those behaviors. Goal commitment, however, does not lead directly to performance. Removing the variance in expectancies that is related to goal commitment but unrelated to performance strengthens the relationship between expectancies and performance.

Maintaining Good Working Relationships

For the maintaining good working relationships model, we included agreeableness, generalized self-efficacy, and social insight, with cognitive ability and experience as indirect performance determinants. Preliminary analyses indicated that goal commitment did not contribute meaningfully to the model, so expectancies was the only proactive cognition variable included. Sample correlations between the variables included in this model are presented in Table 18. Fit statistics for all models tested are presented in Table 19.

In Model 2, we deleted the path from work habits to self-regulation and added a path from work habits to expectancies. Model 1 and Model 2 fit the data equally well, but knowledge was the only direct determinant of performance that had a significant path coefficient.

In Model 3, we removed two nonessential nonsignificant paths and the path from work habits to performance. Skill and self-regulation still had nonsignificant paths to performance, so those paths were removed in Model 4. We also removed a nonsignificant path from expectancies to self-regulation and added a path from experience to self-regulation, which was suggested by the regression analyses. That model fit significantly better than Model 3, but it left several variables with no path to performance. The most logical next step was a direct path to performance from expectancies, but this path was not significant. The regression analyses suggested that military motives was directly related to performance, so this path was added in Model 5. This path was significant and resulted in significantly better model fit. This still left experience and expectancies as variables that are correlated with performance but do not have a path to performance. We tried adding direct paths from both of these variables to performance but neither path was significant and both detracted from model fit. These variables' relationship with performance may be a result of being correlated with other variables that are determinants of performance. Figure 4 presents the path diagram for Model 5, including standardized path coefficients.

Table 18

Sample Correlations Between Variables Included in the Maintaining Good Working Relationships Structural Model

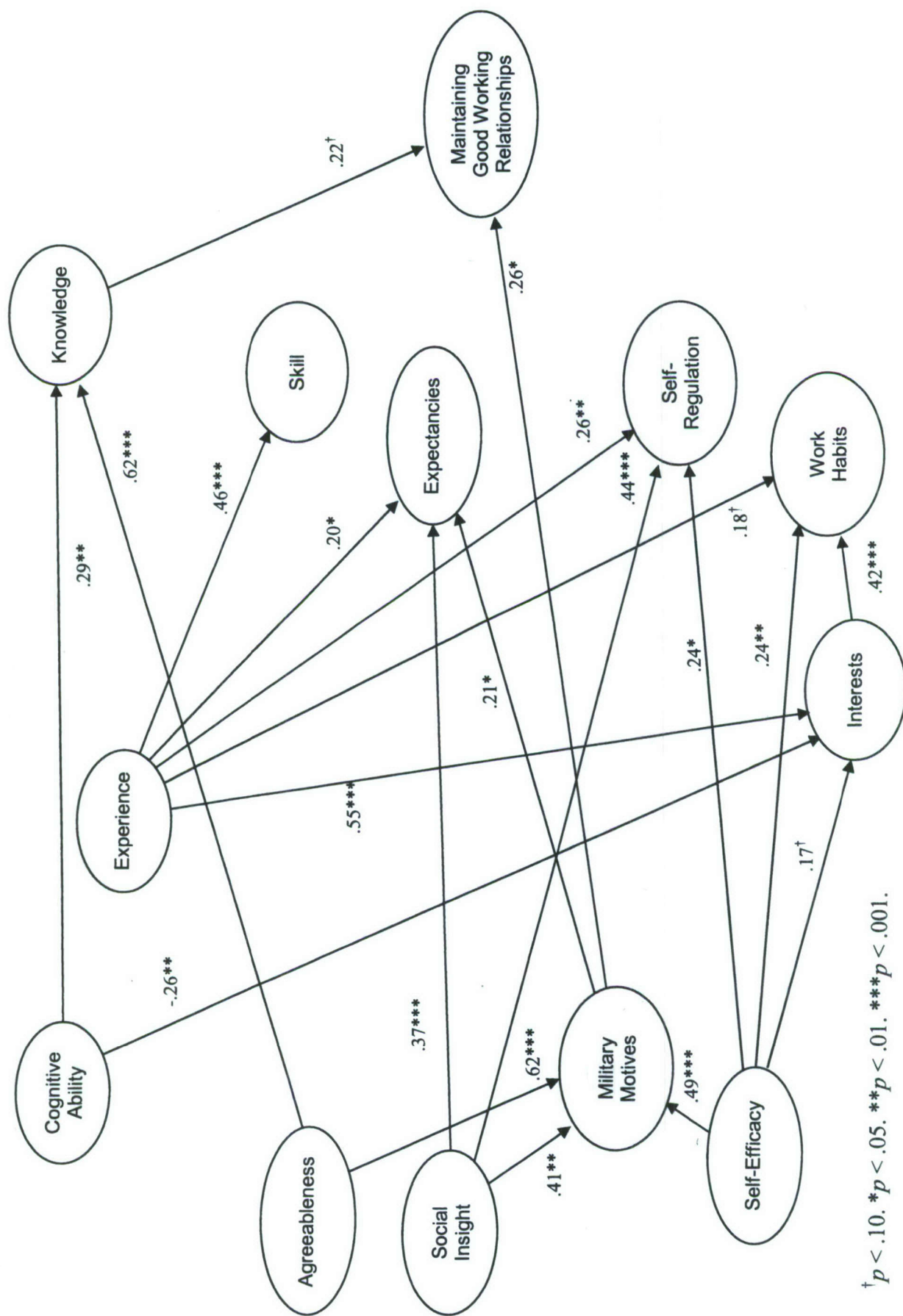
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Performance	1.00												
2. Skill	.10	1.00											
3. Knowledge	.17*	.11	1.00										
4. Self-regulation	.13	.06	.23*	1.00									
5. Work Habits	.04	.23**	.27**	.20*	1.00								
6. Expectancies	.22	-.02	.22**	.38***	.26**	1.00							
7. Interests	.04	.19*	.12	.24**	.51***	.31***	1.00						
8. Military Motives	.27***	.05	.19*	.23*	.32***	.28***	.35***	1.00					
9. Agreeableness	.29***	.25**	.35***	.33***	.25**	.32***	.33***	.33***	1.00				
10. Self-efficacy	.18*	-.04	.19*	.43***	.34***	.32***	.23**	.40***	.20*	1.00			
11. Social Insight	.23**	.08	.24**	.53***	.21*	.39***	.11	.12	.43***	.40***	1.00		
12. Experience	.20*	.34***	.26**	.37***	.39***	.38***	.45***	.28***	.40***	.20*	.25**	1.00	
13. Cognitive Ability	.01	.07	.18*	-.01	-.08	-.01	-.18*	-.05	-.09	.04	-.03	.09	1.00

Note. Pairwise deletion of missing cases. *Ns* range from 120 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$

.Table 19
Goodness of Fit Statistics for Maintaining Good Working Relationships Models Tested

Model	df	χ^2	p-value	RMSEA	ECVI	CFI
Measurement model	540	797.4	.000	.055	7.28	.90
A priori models:						
Model 1	565	835.0	.000	.056	7.20	.90
Model 2	565	834.9	.000	.056	7.20	.90
Post hoc models:						
Model 3	568	835.1	.000	.055	7.16	.90
Model 4	570	829.7	.000	.054	7.10	.90
Model 5	569	824.0	.000	.054	7.08	.90
Path Model Independent of Measurement Model						
Model	df	χ^2	p-value	RMSEA	ECVI	CFI
A priori models:						
Model 1	25	37.6	.051	.057	9.04	.95
Model 2	25	37.4	.052	.057	9.04	.95
Post hoc models:						
Model 3	28	37.7	.105	.047	9.00	.96
Model 4	30	32.3	.356	.022	8.94	.99
Model 5	29	26.5	.596	—*	8.91	1.00

Note. A priori models are described in text. $N = 155$. *RMSEA could not be computed because of a negative square root.



† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4. Final performance prediction model for Maintaining Good Working Relationships.

Organizational Commitment

For the organizational commitment model, we included trust, hope/optimism, and conscientiousness with cognitive ability and experience as indirect performance determinants. Preliminary analyses indicated that goal commitment did not contribute meaningfully to the model so expectancies were the only proactive cognition variable included. In addition, the organizational commitment PBR was uncorrelated with all other variables, so skill was not included as a construct in the model. Sample correlations between the variables included in this model are presented in Table 20. Fit statistics for all models tested are presented in Table 21.

This model differed from Model 1 for the other performance dimensions in that military motives was a direct determinant of work habits. We believed this path made sense for the organizational commitment performance dimension because habitual behaviors relevant to organizational commitment would depend on the level of commitment that an individual possesses. This would not be the case for the other performance dimensions.

In Model 2, we deleted the path from work habits to self-regulation and added a path from work habits to expectancies. We also deleted the path from military motives to expectancies because it was not significant in Model 1 and it was not supported by the regression analyses. Model 1 and Model 2 fit the data about equally well, but self-regulation was the only direct determinant of performance that had a significant path coefficient.

In Model 3, we removed two nonessential nonsignificant paths and the paths from work habits and knowledge to performance. In Model 4, the nonsignificant path from expectancies to self-regulation was removed and a direct path from expectancies to performance was added. This path was not significant, so we deleted it and added a direct path from military motives to performance, which was suggested by the regression analyses. That model fit significantly better than Model 3, but experience had no path to performance despite the high correlation between the two variables. Paths to military motives and self-regulation were not significant, so Model 5 added a direct path from experience to performance. This path was significant and resulted in significantly better model fit. This model provides a path to performance from every variable that is correlated with performance, but the hypothesis that this model adequately fits the data was still rejected ($p = .03$). This meant that there should be at least one path from one construct to another that is not central to the model but needs to be specified to make the model fit well. Examining the sample correlations, it appeared that the path that made the most sense was from military motives to interests. The level of interest an individual has in performing behaviors relevant to organizational commitment should depend on that individual's level of job satisfaction and affective commitment. This path was added in Model 6, resulting in a significant increase in model fit. The hypothesis that Model 6 represents the data well could not be rejected ($p = .29$). Figure 5 presents the path diagram for Model 6, including standardized path coefficients. Two path coefficients are not significant, including the path from self-regulation to performance, but removing them significantly reduces model fit. This suggests that these paths are important for explaining the relationships between variables and they simply require an increase in sample size to reach an acceptable level of significance.

Table 20

Sample Correlations Between Variables Included in the Organizational Commitment Structural Model

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Performance	1.00											
2. Knowledge	.08	1.00										
3. Self-regulation	.16	.23**	1.00									
4. Work Habits	.12	.24**	.13	1.00								
5. Expectancies	.16	.20*	.35***	.42***	1.00							
6. Interests	.07	-.08	.17	.48***	.40***	1.00						
7. Military Motives	.32***	.12	.23*	.54***	.34***	.48***	1.00					
8. Trust	.19*	.11	.27**	.29***	.20*	.16	.41***	1.00				
9. Conscientiousness	.22**	.24**	.42***	.39***	.35***	.32***	.46***	.32***	1.00			
10. Hope/Optimism	.23**	.21*	.46***	.22*	.28***	.19*	.29***	.60***	.55***	1.00		
11. Experience	.30***	.19*	.25**	.22*	.40***	.27**	.30***	.27***	.30***	.27***	1.00	
12. Cognitive Ability	.06	.19*	.05	-.18*	.00	-.23**	-.05	-.01	.00	.09	.11	1.00

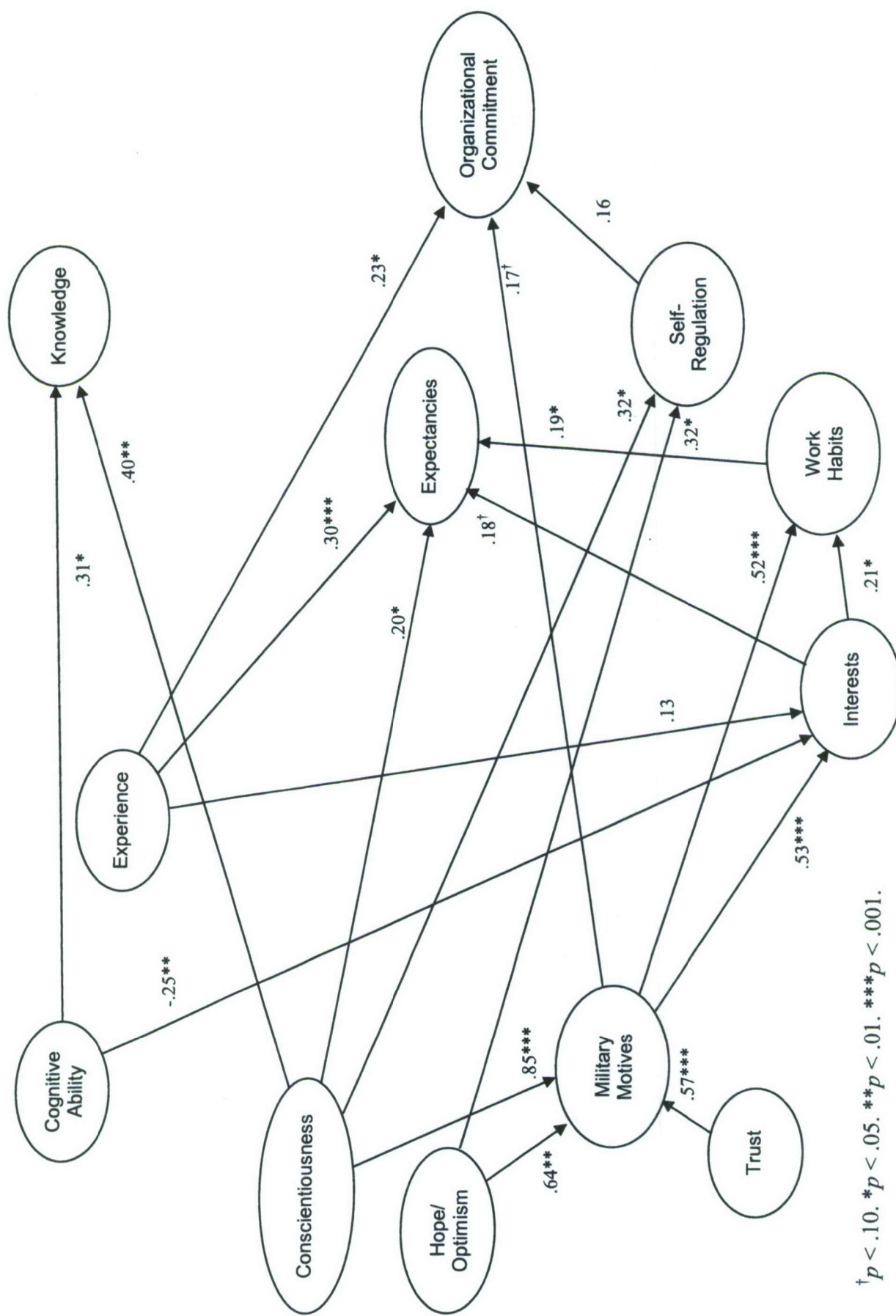
Note. Pairwise deletion of missing cases. *N*s range from 118 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 21

Goodness of Fit Statistics for Organizational Commitment Models Tested

Model	df	χ^2	<i>p</i> -value	RMSEA	ECVI	CFI
Measurement model	511	781.8	.000	.058	7.08	.91
A priori models:						
Model 1	532	833.4	.000	.060	7.14	.90
Model 2	533	832.8	.000	.060	7.12	.90
Post hoc models:						
Model 3	537	835.2	.000	.060	7.09	.90
Model 4	537	827.2	.000	.059	7.03	.90
Model 5	536	822.3	.000	.059	7.02	.90
Model 6	536	810.1	.000	.057	6.94	.90
Path Model Independent of Measurement Model						
Model	df	χ^2	<i>p</i> -value	RMSEA	ECVI	CFI
A priori models:						
Model 1	21	51.6	.000	.097	8.70	.89
Model 2	22	51.0	.000	.092	8.68	.89
Post hoc models:						
Model 3	26	53.4	.001	.082	8.65	.90
Model 4	26	45.3	.011	.069	8.59	.93
Model 5	25	40.5	.026	.063	8.57	.94
Model 6	25	28.3	.294	.029	8.50	.99

Note. A priori models are described in text. *N* = 155.



† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 5. Final performance prediction model for Organizational Commitment.

Showing Initiative

For the showing initiative model, we included trust, extraversion, intellectance, and conscientiousness with cognitive ability and experience as indirect performance determinants. Conscientiousness was not significantly correlated with performance, but we included it in the model because it is highly conceptually related to showing initiative. Preliminary analyses indicated that goal commitment did not contribute meaningfully to the model so expectancies was the only proactive cognition variable included. Sample correlations between the variables included in this model are presented in Table 22. Fit statistics for all models tested are presented in Table 23.

In Model 2, we removed the path from interests to expectancies when the path from work habits to expectancies was added because it was nonsignificant in Model 1 and the path from interests to expectancies would then go through work habits. Work habits was unrelated to both self-regulation and expectancies, so Model 1 and Model 2 fit equally well. In Model 3, we removed the nonsignificant paths, including the paths from knowledge and work habits to performance and the path from military motives to expectancies. This left only skill and self-regulation as determinants of performance, and military motives did not have a path to performance but was highly correlated with performance. In Model 4, we added a direct path from military motives to performance. This significantly improved the fit of the model. It also made the path from self-regulation to performance nonsignificant, so this path was removed.

Intellectance was the only variable correlated with performance that did not have a path to performance. The direct path was not significant. The path to military motives was not quite significant ($p = .12$), but it did reduce ECVI and it explains the relationship between intellectance and performance, so Model 5 includes this path. Figure 6 presents the path diagram for Model 5, including standardized path coefficients.

Adapting to Uncertain or Changing Situations

For the adapting to uncertain or changing situations model, we included trust, anxiety, intellectance, and situational flexibility with cognitive ability and experience as indirect performance determinants. Situational flexibility was uncorrelated with performance, but it was included because it is so conceptually relevant to adaptive performance. Goal commitment was included in this model because preliminary analyses suggested that it was a likely suppressor variable. Sample correlations between the variables included in this model are presented in Table 24. Fit statistics for all models tested are presented in Table 25.

Model 2 fit significantly better than Model 1, but the only significant path to performance was from knowledge. In Model 3, we removed the nonsignificant paths from self-regulation, work habits, and skill to performance, as well as two nonsignificant paths that were not central to the model. Because the path from self-regulation to performance was removed, we added direct paths to performance from expectancies and goal commitment in Model 4. Goal commitment was a suppressor variable that strengthened the relationship between expectancies and performance.

Table 22
Sample Correlations Between Variables Included in the Showing Initiative Structural Model

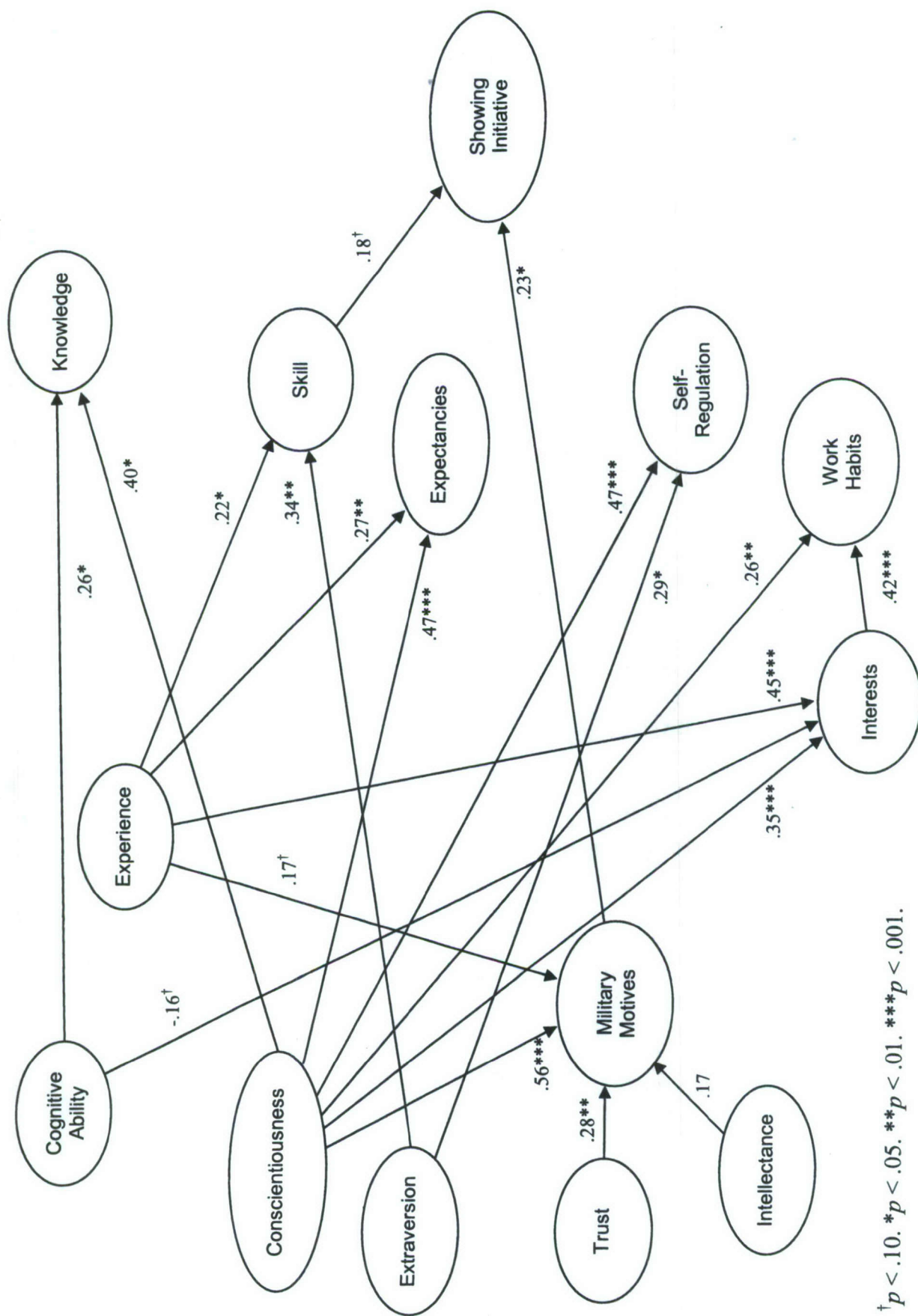
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Performance	1.00													
2. Skill	.18*	1.00												
3. Knowledge	.03	.21*	1.00											
4. Self-regulation	.15	.17	.20*	1.00										
5. Work Habits	-.03	.19*	.23**	.17	1.00									
6. Expectancies	.11	.12	.18*	.35***	.21*	1.00								
7. Interests	.12	.12	.02	.28**	.51***	.34***	1.00							
8. Military Motives	.24**	.16	.20*	.26**	.44***	.31***	.47***	1.00						
9. Trust	.20*	.17*	.19*	.29***	.18*	.17*	.24**	.41***	1.00					
10. Extraversion	.19*	.30***	.23**	.43***	.23**	.26**	.25**	.27**	.53***	1.00				
11. Conscientiousness	.11	.23**	.25**	.49***	.42***	.40***	.35***	.46***	.32***	.45***	1.00			
12. Intellectance	.20*	.17*	.23**	.38***	.18*	.35***	.24**	.19*	.26**	.31***	.36***	1.00		
13. Experience	.21*	.24**	.02	.22*	.20*	.38***	.49***	.26**	.16	.22*	.28***	.15	1.00	
14. Cognitive Ability	-.03	.09	.18*	.06	-.16	.04	-.12	-.05	-.01	.07	.00	.25**	.06	1.00

Note. Pairwise deletion of missing cases. *Ns* range from 118 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 23
Goodness of Fit Statistics for Showing Initiative Models Tested

Model	df	χ^2	<i>p</i> -value	RMSEA	ECVI	CFI
Measurement model	715	1,065.6	.000	.056	9.35	.90
A priori models:						
Model 1	744	1,103.8	.000	.056	9.22	.89
Model 2	745	1,104.0	.000	.056	9.21	.89
Post hoc models:						
Model 3	752	1,109.4	.000	.055	9.15	.89
Model 4	752	1,106.3	.000	.055	9.13	.90
Model 5	751	1,104.3	.000	.055	9.13	.90
Path Model Independent of Measurement Model						
Model	df	χ^2	<i>p</i> -value	RMSEA	ECVI	CFI
A priori models:						
Model 1	29	38.2	.118	.045	11.59	.97
Model 2	30	38.4	.141	.042	11.57	.98
Post hoc models:						
Model 3	37	43.7	.207	.034	11.52	.98
Model 4	37	40.7	.312	.025	11.50	.99
Model 5	36	38.6	.352	.022	11.50	.99

Note. A priori models are described in text. *N* = 155.



† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 6. Final performance prediction model for Showing Initiative.

Every variable that is correlated with performance has a path to performance in Model 4, but the fit statistics independent of the measurement model indicate an inadequate level of fit. Trust is more highly correlated with performance than would be suggested by its distance from the criterion (trust → military motives → expectancies → perform). It is more highly correlated with performance than are military motives and expectancies, which means there must be another path to performance through which trust operates. Trust is not correlated with knowledge but it is correlated with goal commitment, so a path was added from trust to goal commitment. This path was not significant, so we added a direct path to performance in Model 5. The path to performance was significant and made a significant increase in the fit of the model, but the fit statistics independent of the measurement model still did not indicate close fit ($p = .0011$, RMSEA = .082, CFI = .90).

As with the showing initiative model, there must have been one or more missing paths that are not central to the model. Examining the correlations in Table 24, we noticed that knowledge and goal commitment were correlated .40 and considered the likelihood that knowledge is causally related to goal commitment. In a review of the antecedents of goal setting, Wofford, Goodwin and Premack (1992) found that the major determinants of goal level were past performance and ability. It follows that those with greater knowledge relevant to adapting would be more likely to set goals relevant to adaptive performance and be committed to them. Model 6 added a path from knowledge to goal commitment, creating a significant improvement in model fit. Nevertheless, the hypothesis that the model fits the data was still rejected ($p < .05$).

As with the organizational commitment model, we believed that military motives may be a determinant of interests. Job satisfaction, military values, affective commitment, and interests are all potential motives and are intercorrelated, and it makes sense that the more general military motives would lead to the more job-specific interest in participating in situations that involve adapting. We added this path in Model 7 and it resulted in a significant improvement in model fit and the hypothesis that the model fits the data could not be rejected ($p = .27$). Figure 7 presents the path diagram for Model 7, including standardized path coefficients.

Table 24

Sample Correlations Between Variables Included in the Adapting to Uncertain or Changing Situations Structural Model

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Performance	1.00														
2. Skill	.08	1.00													
3. Knowledge	.17*	.13	1.00												
4. Self-regulation	.15	.13	.31***	1.00											
5. Work Habits	-.01	.08	.18*	.27**	1.00										
6. Expectancies	.20*	.03	.20*	.32***	.20*	1.00									
7. Goal Commitment	.03	.14	.40***	.36***	.37***	.49***	1.00								
8. Interests	.03	.07	.05	.34***	.35***	.37***	.42***	1.00							
9. Military Motives	.17*	.07	.09	.27**	.30***	.31***	.28***	.36***	1.00						
10. Trust	.21*	.10	.04	.31***	.11	.14	.25**	.19*	.41***	1.00					
11. Anxiety	-.18*	-.02	-.27***	-.46***	-.25**	-.20*	-.11	-.14	-.14	-.28***	1.00				
12. Intellectance	.18*	.11	.35***	.45***	.25**	.27**	.37***	.27**	.19*	.26**	-.36***	1.00			
13. Sit. Flexibility	-.02	.10	.21*	.45***	.22*	.07	.32***	.31***	.17*	.25**	-.42***	.42***	1.00		
14. Experience	.15	.21*	.24**	.33***	.24**	.37***	.56***	.38***	.24**	.17*	-.11	.29***	.27**	1.00	
15. Cognitive Ability	.11	.09	.23**	.05	-.09	.08	.11	-.04	-.05	-.01	-.13	.25**	.05	.10	1.00

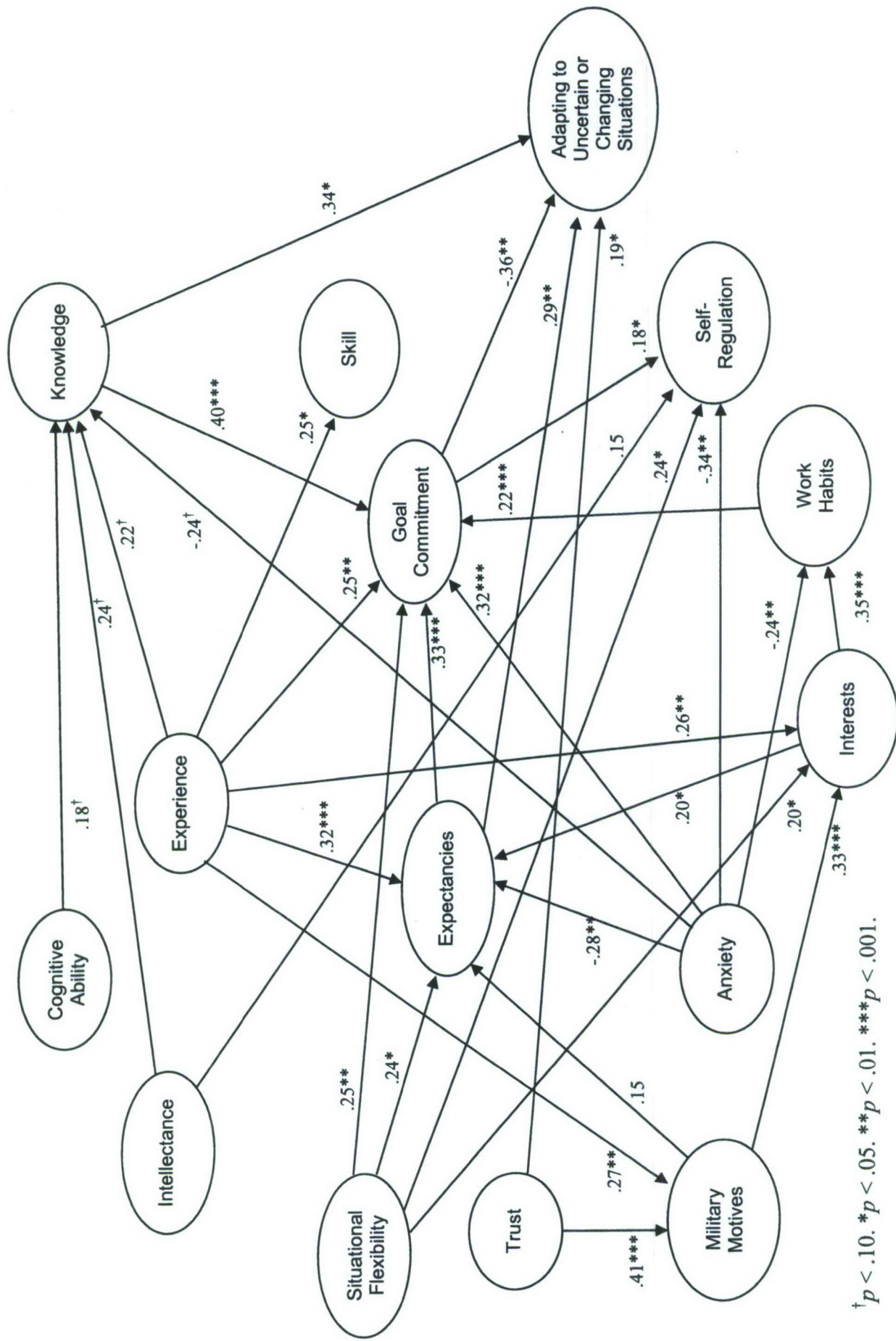
Note. Pairwise deletion of missing cases. *Ns* range from 118 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 25

Goodness of Fit Statistics for Adapting to Uncertain or Changing Situations Models Tested

Model	df	χ^2	p-value	RMSEA	ECVI	CFI
Measurement model	794	1,075.2	.000	.048	9.51	.93
A priori models:						
Model 1	819	1,146.9	.000	.051	9.66	.92
Model 2	819	1,138.7	.000	.050	9.60	.92
Post hoc models:						
Model 3	824	1,143.7	.000	.050	9.57	.92
Model 4	822	1,135.9	.000	.050	9.54	.92
Model 5	821	1,130.5	.000	.049	9.52	.93
Model 6	821	1,115.6	.000	.048	9.43	.93
Model 7	820	1,105.1	.000	.047	9.37	.93
Path Model Independent of Measurement Model						
Model	df	χ^2	p-value	RMSEA	ECVI	CFI
A priori models:						
Model 1	25	71.7	.000	.110	12.99	.83
Model 2	25	63.5	.000	.100	12.93	.86
Post hoc models:						
Model 3	30	68.5	.000	.091	12.90	.86
Model 4	28	60.6	.000	.087	12.87	.88
Model 5	27	55.3	.001	.082	12.85	.90
Model 6	27	40.4	.047	.057	12.76	.95
Model 7	26	29.9	.273	.031	12.70	.99

Note. A priori models are described in text. $N = 155$.



[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 7. Final performance prediction model for Adapting to Uncertain or Changing Situations.

Discussion

In this research, we used a comprehensive general model of individual job performance to examine the process by which individual differences influence performance on five different dimensions. This model included four direct determinants of performance (knowledge, skill, motivation, and work habits), five components of motivation (motives, expectancies, self-efficacy, goal commitment, and self-regulation), and a host of potential indirect performance determinants from the personality, ability, experience, action control, and social intelligence domains. We identified five performance constructs and demonstrated that they were all important aspects of the ROTC cadet/midshipman performance domain. We then tested the performance model within each of these performance constructs.

The level of support for the model depended on the performance construct to which it was applied. In the following sections, we discuss the results for each performance construct, how the best-fitting model differed from the original model, and the implications of the results.

Key Findings

Decision Making/Problem Solving

Decision making/problem solving was the only dimension of task performance that was studied. Previous tests of performance models have been limited to task performance and results have consistently shown that the relationship between cognitive ability and performance is mediated by job knowledge and skill (e.g., Borman et al., 1991; Hunter, 1983; Lance & Bennett, 2000; Schmidt et al., 1986). Our results were consistent with previous research, except cognitive ability was not a significant predictor of performance. Rather, personality was the dominant predictor of performance, but the mediating effect of knowledge and skill also was found. In addition to knowledge and skill, four components of motivation also were found to mediate the relationship between personality and performance. This mediating function of motivation has been postulated in models by Campbell et al. (1993) and Motowidlo et al. (1997), and demonstrated in studies by Barrick, Mount, and Strauss (1993), Gellatly (1996), and Barrick, Stewart, and Piotrowski (2002). However, this is the first research to show the mediating effects of knowledge, skill, and motivation simultaneously.

For the decision making/problem solving model, there were four direct determinants of performance: (a) knowledge, (b) skill, (c) expectancies, and (d) self-regulation. Goal commitment also had a direct path, but as a suppressor variable that strengthened the path from expectancies. This was contrary to the Johnson (2003) model, which posits that all components of proactive cognitions should be positively related to performance. Further research is necessary to understand this complex relationship between expectancy, goal commitment, and decision making/problem solving performance.

Also contrary to the Johnson (2003) model, work habits were not a direct determinant of decision making/problem solving performance. Rather, work habits had an indirect influence through goal commitment. Work habits are only expected to bypass the motivation component and be a direct determinant of performance when the relevant behaviors occur automatically. It is

very likely that the kinds of behaviors assessed in this project do not occur automatically, so the lack of a direct path does not necessarily invalidate that portion of the model. Work habits may be more likely to have a direct effect when the measurement of performance is on simpler or more specific behaviors in specific situations.

Work habits also were expected to be a direct determinant of self-regulation, because individuals whose work habits interfere with their ability to behave in accordance with good performance would be more likely to require self-regulatory strategies to maintain goal-directed performance. Although work habits were correlated with self-regulation, it was not a significant predictor in the presence of other variables.

The relationship between the motives and proactive cognitions components of motivation was consistent with the Johnson (2003) model. The relationship between motives and performance was expected to be mediated by proactive cognitions. In the decision making/problem solving model, general military motives had a direct path to expectancies and interests had a direct path to goal commitment. Contrary to the Johnson model, the relationship between proactive cognitions and performance was not mediated by self-regulation. Instead, self-regulation made an independent contribution to performance in concert with the contribution made by proactive cognitions. This is not too surprising, because many behaviors do not require much self-regulation to enact them, especially if the environment facilitates goal maintenance. Also, the strength of one's motivation to perform a behavior does not necessarily lead to greater success in self-regulating (Heckhausen & Kuhl, 1985).

The best-fitting model for decision making/problem solving is generally very consistent with the Johnson (2003) model. The different components of motivation are distinct and influence performance in the order suggested by the model. All personality and experience variables influence performance indirectly through knowledge, skill, or motivation. Despite the complexity of the model, fit statistics for the path model independent of the measurement model show extremely good fit of the model to the data.

Maintaining Good Working Relationships

The best-fitting model for maintaining good working relationships differed quite a bit from the Johnson (2003) model and the decision making/problem solving model. Of the hypothesized direct determinants of performance, only knowledge had a significant path coefficient. Skill, expectancies, and self-regulation were not direct determinants of performance. The other direct determinant was a component of motivation, but it was general military motives rather than a proactive cognitions component. This suggests that attitudes such as job satisfaction and affective commitment can lead directly to cooperative, social behaviors that support others without any cognition directed at evaluating possible consequences or setting goals.

Maintaining good working relationships is an aspect of social performance, and this model is consistent with the results of Schneider and Johnson's (2005) test of a model of socially competent job performance. For three of the five social performance dimensions they studied, social knowledge mediated the relationship between indirect performance determinants (social insight, personality, and cognitive ability) and performance. Motivation had a significant positive

path to performance in only one of the five models. Schneider and Johnson's measure of motivation focused primarily on the importance respondents placed on performing behaviors relevant to each performance dimension, placing it in the proactive cognitions category of motivation. In our model, we found that knowledge relevant to maintaining good working relationships mediates the relationship between indirect performance determinants (agreeableness, cognitive ability) and performance. Proactive cognitions (i.e., expectancies) did not have a significant path to performance. We found that general motives (job satisfaction, military values, and affective commitment) were directly related to performance, but Schneider and Johnson did not include any of these types of variables in their study. Thus, limiting the constructs to those measured in both studies, the models are very consistent.

This model does a good job of demonstrating why agreeableness is more highly correlated with performance than are self-efficacy or social insight. Maintaining good working relationships performance is a function of knowledge and general military motives. Self-efficacy and social insight are determinants of military motives, but agreeableness is a determinant of both military motives and knowledge. Thus, agreeableness has a higher correlation with performance, as would be predicted by the Johnson (2003) model.

Organizational Commitment

The model for organizational commitment is very different from the Johnson (2003) model. Although self-regulation is a determinant of performance, knowledge and skill are not. Military motives is again a direct determinant of performance, which was not unexpected due to the nature of the criterion. Attitudes such as job satisfaction and affective commitment should lead directly to behaviors relevant to organizational commitment, without having to go through goal setting or expectancy cognitions. Self-regulation makes sense as a direct determinant because behaviors such as following orders or obeying rules may be difficult to perform sometimes and self-regulation could be required to keep the behavior on track. Knowledge and skill are probably not very meaningful constructs with respect to organizational commitment. These types of behaviors do not really require any specific skill to perform them. Knowledge is relevant to the extent that individuals need to know the policies, rules, and values of the organization to behave in accordance with them, but these are probably so central to military life that there would be little opportunity for differential knowledge levels to influence behavior.

Experience is considered an indirect performance determinant, but in this model it had a direct path to performance. A possible explanation for this is that commitment to ROTC is naturally related to experience because cadets and midshipmen who are not committed are weeded out as they leave the program. Therefore, those who have more experience will tend to be rated higher on organizational commitment just by virtue of having stayed with the program, and this relationship would not go through a mediating variable. If this explanation is correct, the direct path from experience to organizational commitment performance probably would not be found in a sample of junior commissioned officers in their first active duty service obligation. These officers have a 3-, 4-, or 5-year commitment, depending on commissioning source, that must be met before they are eligible to leave, so experience would not be a good direct indicator of commitment.

It is interesting that the models for organizational commitment and maintaining good working relationships are consistent with the counterproductive work behavior (CWB) model for which Mount, Ilies, and Johnson (2006) found support. CWB is any intentional behavior on the part of an employee that is contrary to the legitimate interests of the organization (Sackett & DeVore, 2001). Examples of CWBs include theft; property destruction; misuse of information, time, or resources; drug or alcohol use; unsafe behavior; poor attendance; intentionally slow or sloppy work; and inappropriate verbal or physical actions (Gruys, 2000). Mount et al. distinguished between interpersonal CWBs, which are behaviors directed at individuals in the organization with the intent to produce emotional or physical discomfort or harm, and organizational CWBs, which are behaviors directed toward harming the interests of the organization. Although not the same as the performance dimensions we studied, maintaining good working relationships and organizational commitment should be highly negatively correlated with interpersonal CWB and organizational CWB, respectively. Mount et al. found support for a model in which job satisfaction partially mediated the relationships between personality traits and CWB. Job satisfaction was related to both types of CWB. Agreeableness had a direct effect on interpersonal CWB as well as an indirect effect on both types of CWB through job satisfaction. Conscientiousness had a direct path to organizational CWB, but the mediating effect through job satisfaction was weaker. In our research, we found that agreeableness had an indirect effect on maintaining good working relationships through both military motives (which includes job satisfaction) and knowledge. In the organizational commitment model, the agreeableness facet of trust had an indirect influence through military motives. Conscientiousness also had an indirect influence through military motives and self-regulation.

Showing Initiative

The best-fitting model for showing initiative was similar to the best-fitting models for the other two citizenship performance dimensions. In all three models, military motives was a direct determinant of performance, while expectancies and work habits were not. Besides military motives, each citizenship performance dimension had one other direct determinant—knowledge for maintaining good working relationships, self-regulation for organizational commitment, and skill for showing initiative. Even the indirect determinants had similar relationships. Cognitive ability was a positive determinant of knowledge and a negative determinant of interests. Experience was a determinant of expectancies and interests in all three models, and of skill in the maintaining good working relationships and showing initiative models. Conscientiousness was included in the models for organizational commitment and showing initiative, and in both models it was a determinant of knowledge, expectancies, self-regulation, and military motives.

The similarity between these three models suggests that a single model for citizenship performance may be appropriate. Citizenship performance involves behaviors that are typically not formally required on the job (although they may be; Organ, 1997) and that support the organization without necessarily providing a direct benefit to the individual. Given this definition, it is not surprising that the general motives of job satisfaction, affective commitment, and military values are direct determinants of citizenship performance. An individual who is dissatisfied with his or her job, does not have an affective attachment to the organization, and does not share the values of the organization would be very unlikely to engage in behaviors such

as participating in social activities arranged for the unit, exceeding standards when carrying out orders, or performing extra duties without being asked.

This lends support to Organ and Ryan's (1995) idea that the relationship between personality and organizational citizenship behaviors (OCB) is probably mediated by attitudes such as job satisfaction, organizational commitment, and fairness perceptions. They came to this conclusion based on the observation that job attitudes tend to be more strongly related to OCB than are personality variables (Podsakoff et al., 2000). This research empirically demonstrates this mediating effect of attitudes on the relationship between personality and citizenship performance.

Other determinants of citizenship performance appear to depend on the behaviors representing the dimension being predicted. Some behaviors, such as those included in the organizational commitment dimension, do not require any particular knowledge or skill in order to enact them (e.g., following orders, displaying a professional appearance while in uniform), so knowledge and skill are unlikely to be direct determinants. Knowledge was a determinant of maintaining good working relationships, because knowledge of how to act in social situations varies considerably among individuals (Schneider & Johnson, 2005). Social skill would be a likely determinant of certain types of social behavior, such as counseling, because knowing what to do can be very different from actually being able to do it well. Skill was a determinant of showing initiative, because behaviors like seeking ways to accomplish work when there is no clear solution, anticipating the needs of the unit, and initiating projects that may contribute to mission success require a certain amount of skill. If showing initiative were only measured using behaviors such as volunteering, seeking clarification, and finding additional work when one's own duties are completed, motivation alone would likely determine performance because no particular knowledge or skill is necessary to engage in those behaviors.

Adapting to Uncertain or Changing Situations

The best-fitting model for adaptive performance was similar to the model for decision making/problem solving, but there were also some important differences. As with decision making/problem solving, expectancies was a direct determinant of performance, with goal commitment acting as a suppressor variable that strengthened this relationship. Knowledge was also a direct determinant. Unlike decision making/problem solving, skill and self-regulation were not significant determinants of performance.

This was the only performance dimension for which there was a direct path from a personality construct to performance. Trust had a direct path to performance as well as a path through military motives. We examined the items measuring trust and the items measuring adaptive performance to determine why trust would be directly related to performance rather than going through some other construct that is theoretically more proximal to performance. Adaptive performance in the military often involves giving direction to others, and several of the items in the performance rating instrument measure that aspect of adapting (e.g., provides quick, clear, and effective direction when faced with changing situations or unexpected events; provides clear structure to others in uncertain or ambiguous situations). Other items do not explicitly mention directing others (e.g., responds quickly to difficult situations) but are likely to involve directing others in many situations. Trust measures the extent to which the respondent trusts and

believes in others. In order to effectively adapt to uncertain or changing situations that require direction to be given to others, it is necessary to trust that others will immediately and effectively carry out the orders given to them. If the individual does not trust others to do what needs to be done, he or she may be overwhelmed and ineffective by trying to do everything on his or her own. Thus, knowledge, skill, and motivation may not be enough if the personality characteristic of trusting others does not allow for quick orders to be given to others when changes need to be made. We suspect that skill would be a likely mediating variable for trust if this aspect of adaptive skill had been measured by our skill measure.

Summary

The Johnson (2003) model was partially supported for each performance dimension investigated, but there were important differences in each case. The primary difference between the Johnson model and the best-fitting models was that work habits had no influence on performance or self-regulation. Another difference was that each component of motivation (motives, proactive cognitions, and self-regulation) had the potential to be a direct determinant of performance, rather than there being a completely mediated relationship between the components and performance. Other than those two aspects, the model was supported in that personality, ability, and experience influenced performance through two or more of the hypothesized mediating variables (except for the direct effect of trust on adaptive performance). There was also support for the notion that personality variables have differential relationships with different components of motivation, as suggested by Heckhausen and Kuhl (1985). This supports the need for splitting motivation into its components in order to truly understand how personality influences performance.

As expected, the precise nature of the relationships between predictors, mediators, and criteria depended on the performance dimension and predictors included in the model. The model that was most similar to the general Johnson (2003) model was the one for the decision making/problem solving performance dimension, which was the only dimension of task performance included in this project. For this dimension, knowledge, skill, proactive cognitions, and self-regulation were all direct determinants of performance, and each of these determinants was predicted by different combinations of personality traits, experience, and motives. Motives were related to performance only through the mediating influence of proactive cognitions. A similar model was supported for the adaptive performance dimension of adapting to uncertain or changing situations. The differences were that only some of the hypothesized direct determinants had significant paths to performance, and one personality trait had a direct influence on performance.

This model did not generalize to the citizenship performance dimensions, although a similar model was found for each different dimension of citizenship performance. In this model, motives were a direct determinant of performance and proactive cognitions were not. Knowledge, skill, and self-regulation were direct determinants, but never all at once and the one that was a determinant depended on the citizenship dimension of interest. There were also two cases in which a hypothesized indirect performance determinant had a direct influence on performance.

To summarize, modified versions of the Johnson (2003) model were found to describe the process by which predictor variables influence performance. Different models are necessary to describe the process for task, citizenship, and adaptive performance.

Contributions of This Research

This research advances our understanding of job performance prediction by providing evidence in support of a model of the process by which individual-difference variables predict specific dimensions of performance. Many models of the relationship between individual differences and job performance have been proposed, but there has been very little empirical support for any of them. This is especially true for less-studied aspects of performance such as citizenship performance and adaptive performance, which were the primary focus of this research. An established model of the process by which individual differences in predictor variables lead to individual differences in specific dimensions of performance can be used to guide research linking specific predictors to specific performance dimensions by helping to identify theoretically relevant predictors for different criteria.

This research advances our understanding of the performance prediction process. No previous research on performance prediction models has included this many predictors, this many criteria, or this many mediators. Tests of models of performance have typically included measures of job knowledge and skill (or job proficiency), but these studies only measure motivation indirectly. For example, Borman et al. (1995) included measures of personality as a surrogate for motivation. Lance and Bennett (2000) included measures of awards and disciplinary actions as surrogates for motivation. Schneider and Johnson (2005) measured motivation directly, but only in terms of the importance of engaging in certain behaviors to the individual. Barrick et al. (2002) developed a measure of three psychological motives (accomplishment striving, status striving, communion striving) and demonstrated that these motives mediated the relationship between personality and sales performance. They did not include measures of knowledge or skill in their study. In our research, we measured motivation in several different ways. We developed a measure of self-regulation success and demonstrated that it was related to motivational traits, action control, and performance. We developed a proactive cognitions scale that included measures of expectancies, self-efficacy, and goal commitment. We measured the following potential motives for engaging in performance-relevant behavior: (a) job satisfaction, (b) military values, (c) affective commitment, (d) interests, (e) prosocial values, (f) organizational concern, and (g) impression management.

The tests of performance models mentioned above have been limited to task performance (e.g., technical proficiency, sales performance) or overall performance as a criterion. Our research tested the performance model on five different dimensions of performance representing the task, citizenship, and adaptive performance domains.

There have been only a few studies that have attempted to test the idea that citizenship knowledge and skill mediate the relationship between personality and citizenship performance. Schmit, Motowidlo, Degroot, Cross, and Kiker (1996) investigated the mediating role of citizenship knowledge in the personality-citizenship performance relationship in a sample of sales associates. In this research, the personality measures assessed extraversion, agreeableness,

and conscientiousness. The citizenship knowledge measure was a situational interview designed to assess the participants' knowledge of appropriate customer service behaviors; the job performance measure was supervisor ratings of the participants' customer service-related job performance. Schmit et al. found that citizenship knowledge mediated the personality-citizenship job performance relationship only in the case of extraversion. It is not clear how relevant this research is, however, because customer service is probably a combination of task and citizenship performance.

Schneider and Johnson (2001) used a situational judgment test as a measure of citizenship knowledge for the dimensions of personal support and conscientious initiative. Predictors were agreeableness, achievement, dependability, and cognitive ability. Criteria were supervisor ratings of personal support, conscientious initiative, and customer service performance. The citizenship knowledge mediation hypothesis was tested separately for each construct, and support was mixed. Conscientious initiative knowledge did not mediate the relationship between achievement and conscientious initiative performance. When testing the relationship between agreeableness and personal support performance, a model in which personal support knowledge mediated the relationship fit equally as well as a model in which there was no mediation. For customer service, the mediation effect was found for achievement, but not for dependability or agreeableness.

Schneider and Johnson (2005) demonstrated that a constructed response video-based test of social knowledge mediated the relationship between a "social cunning" personality factor and interpersonal sensitivity performance, but it did not mediate the relationship between personality and performance for four other performance dimensions (although it did mediate the relationship between social insight and performance for three dimensions).

In this research, we tested the mediating role of citizenship knowledge and skill between personality and performance for three citizenship performance dimensions, in the presence of other potential mediators. We found that knowledge mediated the relationship between agreeableness and maintaining good working relationships performance and that skill mediated the relationship between extraversion and showing initiative performance. Neither skill nor knowledge was a mediator for organizational commitment performance. By including other potential mediators in our model, we demonstrated that citizenship knowledge and skill mediate some personality-performance relationships, but other personality variables predict citizenship performance through motivation.

Limitations

This research does have several potential limitations. First, several of the measures of our constructs were developed specifically for this project and are experimental in nature. Although we presented evidence to support the construct validity of these measures, it is still not clear how well these measures operationalized the constructs. The self-regulation and work habits measures were especially experimental because no one had attempted to measure these constructs in this way before. The Self-Regulation Scale had good psychometric properties, but the Work Habits Scale was uncorrelated with performance and the extent to which this is due to the nature of the criterion versus inadequate measurement is not clear.

The Past Behavior Record was used as a measure of skill because it could be administered to a large group of people along with many other instruments in a timely fashion. Although it was correlated with decision making/problem solving and showing initiative, it was not correlated with maintaining good working relationships, organizational commitment, or adaptive performance. This may be due to the nature of the criterion (e.g., skill at displaying organizational commitment probably does not make sense), but skill could be measured in a better way given more time and resources. For example, a structured interview would be preferred over a PBR because the interviewer could probe to make sure the individual provides all the necessary information to evaluate the level of skill he or she possesses. An even better measure would be a role-play exercise to evaluate interpersonal skill, or a computerized simulation to evaluate adaptability.

A second limitation is the sample, which was composed of ROTC cadets and midshipmen across different military branches at different universities. It would be preferable to stay within one branch to eliminate any possible confounding effects of branch, but that would have severely limited the sample size we were able to obtain. Also, although ROTC cadets are in training to become junior commissioned officers, there is some question as to the extent to which these results will generalize to actual junior commissioned officers.

Finally, our sample size was fairly low relative to the number of parameters in our structural equation models. Although our models fit well, a larger sample size would lead to more confidence in the results. Some nonsignificant path coefficients also may also have reached standard significance levels with a larger sample.

Directions for Future Research

There are a number of areas of future research suggested by this project, some of which can be conducted using the data already collected. One area of research we are planning is the extent to which different methods of scoring SJTs produce comparable scores, reliabilities, and criterion-related validities. We did some of this research already to determine that we would use the cadre scoring key, but there is great potential for additional scoring systems to explore. The different methods we will examine are (a) scoring based on a correct-incorrect coding of the "best" response only, (b) scoring based on the mean effectiveness rating of the response chosen, (c) scoring based on selection of both a "best" and a "worst" response, and (d) scoring based on rating the effectiveness level of each response. We will evaluate each of these scoring procedures for (a) consensus-based scoring, (b) expert based scoring, and (c) empirical scoring. Consensus-based scoring also allows us to examine differences in effectiveness ratings associated with subgroups of examinees, so we will determine if there are meaningful differences in the appropriate situational responses across different ROTC branches or across third- and fourth-year cadets/midshipmen.

Another area of research we will explore is the comparison of the conventional rating format to the MARS rating format for the PBR. We will investigate a variety of mechanical scoring schemes for the MARS ratings to determine the optimal combination of situation, behavior, and outcome for each performance dimension. We will compare the validity of the mechanical scoring system for MARS with the clinical scoring system used by raters in arriving

at overall judgments using the conventional format. We expect that the MARS format will result in better criterion prediction. This would suggest an easier and more valid way of evaluating interviewees in structured interviews.

One implication of the performance models we identified is that narrow personality traits should be better predictors of specific performance dimensions than should broad personality variables such as the Big Five. The determinants of performance are necessarily at a more specific level than is the performance dimension itself, and prediction is better when constructs are matched on level of specificity (Schneider, Hough, & Dunnette, 1996). The data collected in this research and the support for the models tested can be used to explain the predictive superiority of narrow personality traits by demonstrating that they have stronger relationships with the determinants of performance. For example, the anger facet of emotional stability was expected to influence more determinants of maintaining good working relationships than was the anxiety facet. This can be demonstrated by examining the correlations of each facet with the different variables that have been found to influence performance. Facets that are correlated with more determinants of performance should have larger correlations with performance; and when this happens, the facet score also should be a better predictor than the factor score.

Another direction for future research is to study how potential moderator variables influence the relationships between performance and its determinants. Some of the moderators that have been found to influence the extent to which personality predicts performance are situational strength (Beaty, Cleveland, & Murphy, 2001), occupation (Barrick, Mount, & Judge, 2001), time on job (Helmreich, Sawin, & Carsrud, 1986), autonomy (Gellatly & Irving, 2001), and typical vs. maximum performance measurement (Marcus, Goffin, Johnston, & Rothstein, 2007). Personality and ability have been found to interact when predicting performance (Wright, Kacmar, McMahan, & Deleeuw, 1995), although most recent studies have shown no interaction (Mount, Barrick, & Strauss, 1999; Sackett, Gruys, & Ellingson, 1998).

We remain convinced that work habits can directly influence performance in some situations even though that was not found for the performance dimensions we studied. Work habits should influence performance directly when job-relevant behavior occurs automatically despite motivation to behave otherwise. Autonomy is expected to moderate this direct relationship because work habits will have less of an influence on performance in stronger situations. Autonomy is the extent to which the environment allows an individual to behave in idiosyncratic ways. The stronger a situation, the less autonomy the individual has. The ROTC environment may be too strong a situation for work habits to be related to performance, so future research could examine this relationship in an environment that clearly allows for the operation of work habits. In addition, the criterion must consist of behaviors that can occur automatically. Given a criterion like this—the opportunity for work habits to influence performance and variance in the extent to which individuals' work habits are consistent with performance—we expect that work habits influence performance and self-regulation in the manner hypothesized.

As mentioned in the section on limitations, future research should explore alternative ways of measuring skill, especially for constructs such as maintaining good working relationships and adaptive performance. Structured interviews, work sample tests, role plays, and

computerized simulations are alternative ways of measuring skills that probably would provide better measurement than the PBR.

This type of research should continue to be conducted with different performance dimensions. The performance models for the citizenship performance dimensions differed considerably from the task and adaptive performance models, but they were relatively consistent across the three citizenship performance dimensions included in this project. It would be beneficial to test this model on other citizenship performance dimensions to determine if there is a general model of citizenship performance that can be distinguished from a model for task performance or for adaptive performance. This research also can be conducted on many other task performance dimensions besides the one we included in this project. In addition, research on additional dimensions of adaptive performance (Pulakos et al., 2000) would help to distinguish adaptive performance dimensions from task and citizenship performance.

Another type of performance that was not addressed in this research is counterproductive work behavior (CWB). Models of the relationships between individual differences and CWBs (e.g., Cullen & Sackett, 2003; Mount et al., 2006) are generally consistent with the citizenship performance model for which we found support, so extending this research to CWBs is a natural next step.

Finally, this research should be replicated in different samples. We used an ROTC sample because they are in training to become junior commissioned officers and we expected the results to generalize to that population. Future research should be conducted in a sample of actual junior commissioned officers to ensure that these results are consistent across samples. Enlisted Soldiers, NCOs, and senior officers are other potential military samples; the model also can be tested in civilian samples for different types of jobs.

Potential Army/Military Applications

This research provides the Army with a tool that can be used to identify the constructs through which individual difference variables work to influence performance on specific dimensions. This is especially important for citizenship and adaptive performance, which are important components of Army officer jobs but have received little research attention in a military or civilian context. This model contributes to a better understanding of the relationships between predictors, mediators, and job performance criteria. The Army can use this model to identify interventions that will have the greatest impact on areas of performance that are deficient in certain officers. For example, attempts to increase citizenship performance behaviors should be directed at increasing job satisfaction. This tool also would be effective in identifying training and/or development needs. Given a criterion construct on which an individual's performance is in need of improvement, this model can help to identify the determinants of performance on that construct. For example, an individual possessing adequate skill and knowledge may determine that he or she must learn new self-regulatory strategies to maintain goal-directed behavior.

Several products that may be very useful to the Army were developed for this project. First, the various motivation-related instruments we developed/assembled and validated against criteria of importance to the Army should prove to be quite useful as self-development tools.

Completing these instruments can help Soldiers and/or officers learn about their own attitudes, values, goal commitment, self-efficacy, self-regulatory skills, and work habits relevant to five critical performance dimensions.

Second, the Past Behavior Record Form may prove to be useful for training. In particular, the evaluation guide used to score this instrument will provide useful information regarding where various skill-relevant behaviors fall on various performance continua. Moreover, the principles induced during the process of calibrating the performance-relevant skills to different points on these anchored rating scales will make useful learning points in training programs. The situational judgment test also will be a useful self-paced training tool. Individuals are presented with realistic situations and choose from a variety of alternative response options. Explanations of the strengths and weaknesses of each response can be developed to help the trainee understand the level of effectiveness of the chosen option and the most effective option.

Finally, the performance rating instrument may have applied value for performance appraisal, training needs analysis, or criteria for future validation studies. In addition, it would make a useful feedback and development tool. The performance rating form is a multi-source rating tool. As such, it cannot only provide a profile of strengths and weaknesses, it can provide information about discrepancies between how an individual is seen from different perspectives (i.e., subordinates, peers, superiors). It would be extremely useful, for example, for a junior officer to become aware of differences between his or her self-perceived performance and the perceptions of his or her performance held by subordinates.

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Appendix A

Definitions of Task, Citizenship, and Adaptive Performance Dimensions

Performance Dimension Definitions

Broad Performance Categories

Task Performance

Task performance includes the core activities that distinguish between one job and another and are typically the kinds of activities emphasized by formal job descriptions. Task performance consists of activities that contribute to the organization's technical core either (a) directly by creating the goods or delivering the services produced by the organization, or (b) indirectly by providing it with needed materials or services (e.g., accounting, distribution, personnel, legal). This includes management functions such as planning, coordinating, organizing, and supervising to ensure that the activities of others are carried out effectively and efficiently.

Citizenship Performance

Citizenship performance consists of activities that support the broader environment in which the technical core must function, including behaviors such as volunteering for tasks not formally part of the job, demonstrating effort, helping and cooperating with others, following organizational rules and procedures, and supporting organizational objectives. Citizenship performance is less likely than task performance to be role-prescribed, although in some jobs certain citizenship performance dimensions may be required. Citizenship performance activities are typically common to many or all jobs.

Adaptive Performance

Adaptive performance is the proficiency with which a person alters his or her behavior to meet the demands of the environment, an event, or a new situation. Many aspects of adaptive performance overlap with components of task or citizenship performance, but one aspect that is distinct is dealing with uncertain and unpredictable work situations. This includes taking action when necessary without having all the facts at hand; adjusting plans, actions, or priorities to deal with changing situations; and imposing structure to provide focus in dynamic situations.

Specific Task Performance Dimensions

Job-Specific Task Proficiency

This is the degree to which an individual can perform the tasks that are central to the job. These tasks represent the core of the job and are the primary definers of the job. Examples include driving a tank, directing air traffic, and building bridges.

Non-Job-Specific Task Proficiency

This is the degree to which an individual can perform tasks or behaviors that are not specific to his or her particular job. In the military, for example, there are sets of common tasks (e.g., first aid, basic navigation, using protective equipment) for which everyone is responsible.

Written and Oral Communication Proficiency

This reflects the proficiency with which someone can write or speak when making oral or written presentations for audiences varying from one person to thousands. This would include presenting an idea in a meeting, writing a proposal, or doing a presentation for clients.

Management/Administration

This includes the major elements of management that are distinct from direct supervision, such as performance of behaviors directed at articulating goals for the unit or enterprise, organizing people and resources to work on them, monitoring progress, helping to solve problems or overcome crises that stand in the way of goal accomplishment, controlling expenditures, obtaining additional resources, and representing the unit in dealings with other units.

<i>Decision Making</i>	Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions.
<i>Problem Solving</i>	Generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.
<i>Planning and Organizing</i>	Formulating short- and long-term goals and objectives; forecasting possible problems for the unit/organization and developing strategies for addressing these problems; organizing and prioritizing work; time management.
<i>Coordinating Resources</i>	Properly utilizing personnel and other resources to increase unit and organizational effectiveness; coordinating the work within the unit; balancing interests of own unit and those of the organization as a whole, if necessary.
<i>Administration and Paperwork</i>	Handling paperwork requirements; performing day-to-day administrative tasks such as reviewing reports, going through mail, approving routine requests, and so on; keeping accurate records; and administering policies as appropriate.

Supervision

This includes all the behaviors directed at influencing the performance of supervisees through face-to-face interpersonal interaction and influence. Supervisors set goals for their supervisees, teach them more effective methods, model the appropriate behaviors, and reward or punish in appropriate ways.

<i>Guiding, directing, and motivating subordinates and providing feedback</i>	Providing guidance and direction to subordinates; motivating subordinates by providing them with recognition, encouragement, constructive criticism, and other feedback as appropriate; helping to set goals and maintaining performance standards for subordinates; monitoring subordinate performance.
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Specific Citizenship Performance Dimensions

Personal Support

<i>Maintaining Good Working Relationships</i>	Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.
<i>Interpersonal Adaptability</i>	Being flexible and open-minded when dealing with others; listening to and considering others' viewpoints and opinions and altering one's own opinion when appropriate; being open and accepting of negative or developmental feedback; demonstrating keen insight of others' behavior and tailoring one's own behavior to persuade, influence, or work more effectively with them.
<i>Helping Others</i>	Helping others by offering suggestions, teaching them useful knowledge or skills, directly performing some of their tasks, and providing emotional support for their personal problems.
<i>Cooperation</i>	Cooperating with others by accepting suggestions, informing others of events they should know about, and putting team objectives ahead of personal interests.
<i>Showing Consideration</i>	Showing consideration, courtesy, and tact in relations with others as well as motivating and showing confidence in them.

Organizational Support

<i>Representing the Organization to the Public</i>	Representing the organization to those not in the organization; maintaining good organizational image to the public, the government, and others; defending and promoting the organization to others.
<i>Organizational Commitment</i>	Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.
<i>Suggesting Improvements</i>	Suggesting changes to try to improve unit or organizational functioning; trying to continually improve the way things are being done.

Conscientious Initiative

<i>Persisting to Reach Goals</i>	Persisting with extra effort to attain objectives, even under difficult and challenging conditions; overcoming obstacles to get the job done.
<i>Showing Initiative</i>	Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.
<i>Self-Development</i>	Developing knowledge and skills by taking advantage of opportunities within the organization and outside the organization through the use of one's own time and resources.

Specific Adaptive Performance Dimensions

<i>Dealing with Uncertain and Unpredictable Work Situations</i>	Taking effective action when necessary without having to know the total picture or have all the facts at hand; readily and easily "changing gears" in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black-and-white; refusing to be paralyzed by uncertainty or ambiguity.
<i>Physically Oriented Adaptability</i>	Adjusting to challenging environmental states such as extreme heat, humidity, cold, or dirtiness; frequently pushing oneself physically to complete strenuous or demanding tasks; adjusting weight and muscular strength or becoming proficient in performing physical tasks, as necessary.

Appendix B
Final Performance Rating Instrument

Performance Rating Instrument for ROTC Cadets and Midshipmen

For Research Purposes Only
[Administered Online]

Your ID # (From the e-mail containing the link to this survey): _____

ID # of person you are rating (from the list of participants): _____

Your relationship to the person being rated (check one): ☐ Supervisor
☐ Peer
☐ Subordinate

Click NEXT>> to continue

Instructions

This rating form includes 40 behavior statements reflecting certain aspects of the role of ROTC cadet or midshipman. You will be rating the performance of a cadet/midshipman whose behavior you know well on each of these behaviors.

Use the following scale to indicate the extent to which each statement describes the person being rated:

- 1 = Not at all
- 2 = To a small extent
- 3 = To a moderate extent
- 4 = To a large extent
- 5 = To a very great extent
- N = Not observed

Make your ratings as carefully and accurately as possible. To help you to avoid common errors made by raters, please read the information presented on the next screen carefully.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Click NEXT>> to continue.

Rating Tips

When rating the performance of others, there are several types of common rating tendencies that may affect the accuracy of the ratings. Please review the tendencies described below and keep this information in mind as you make your ratings.

Halo. This is the tendency to give a person similar ratings on all dimensions of performance. This may happen if all ratings are simply based on a general impression of a person, or if performance on one dimension is allowed to affect the ratings on other dimensions. An example would be a rater who allows a ratee's outstanding communication skills to affect the evaluation of the ratee's personal support skills. It is very unlikely that anyone performs at the same level on all of the different dimensions of social performance. Instead, most people perform well in some areas and less well in other areas. Your ratings should reflect the strengths and weaknesses of the person you are rating.

Leniency/Severity. This is the tendency to only give ratings at one end of the scale. An example of a lenient rater would be someone who gives only high ratings because he or she wants to avoid giving ratings that seem too "negative." An example of a severe rater would be someone who gives only low ratings to motivate his or her subordinates to work harder. It is important that the ratings are accurate and reflect the ratee's performance on each dimension of social performance. This means that ratings may be low on some dimensions, and high on others.

Single Incident/Recency. This is the tendency to be overly influenced by one particularly effective or ineffective example of a person's performance, or by the most recent incident observed. For example, let's say that last Friday Jane was exceptionally supportive of another person in her unit. When rating an item relevant to the dimension Personal Support, the rater remembers that one incident and rates Jane a "5." Instead, the rater should think about Jane's typical performance over time. The rating should reflect typical performance rather than just one example or the last incident that can be remembered.

Stereotypes. This is the tendency to allow information that has nothing to do with performance to influence ratings. A person's family background, education, gender, or previous experience may lead a rater to rate the person in certain ways, either high or low. An example is a rater who rates all of the women in his group a 4 or 5 on items relevant to Personal Support because he believes all women are high on this dimension. Your ratings should be based only on what you have seen the person do.

Same Level of Effectiveness. This is the tendency to give everyone the same rating. It is very unlikely that all of the people you are rating perform at the same level of effectiveness on a particular social performance dimension. As such, your ratings should reflect who is performing more effectively and who is performing less effectively on each aspect of social performance.

Although these tendencies are important and you should be aware of them, the most important thing is that you rate each person's social performance accurately. Focus on making accurate ratings, not on avoiding rating tendencies. If you think about what you are doing and base your ratings on behavior, your ratings are likely to be accurate.

Now, click NEXT >> to go on to the next page and begin making your ratings.

To what extent does each statement describe the person you are rating?

This person:	To a Very Great Extent					Not Observed	
	To a Large Extent						
	To a Moderate Extent			To a Small Extent			
	To a Small Extent		Not at all				
	1	2	3	4			
1. Makes decisions without assistance in a timely manner	1	2	3	4	5	N	
2. Finds effective solutions to problems quickly when necessary.....	1	2	3	4	5	N	
3. Obtains all relevant information before making decisions	1	2	3	4	5	N	
4. Detects problems quickly when they exist.....	1	2	3	4	5	N	
5. Chooses an effective course of action based on available facts	1	2	3	4	5	N	
6. Makes decisions with confidence and authority.....	1	2	3	4	5	N	
7. Asks team members for input when necessary to solve a problem.....	1	2	3	4	5	N	
8. Identifies the causes of problems in a timely manner.....	1	2	3	4	5	N	
9. Quickly gains the trust of others.....	1	2	3	4	5	N	
10. Maintains good working relationships through effective communication.....	1	2	3	4	5	N	
11. Addresses personal conflicts constructively and in a professional manner.....	1	2	3	4	5	N	
12. Develops and maintains good working relationships with other military personnel.....	1	2	3	4	5	N	
13. Actively participates in social and recreational activities arranged for the unit.....	1	2	3	4	5	N	
14. Treats others with respect regardless of their rank, background, or characteristics	1	2	3	4	5	N	
15. Makes an effort to learn and use others' names	1	2	3	4	5	N	
16. Makes people feel comfortable about approaching and talking with him or her	1	2	3	4	5	N	
17. Displays a sharp, professional appearance while in uniform.....	1	2	3	4	5	N	
18. Exceeds standards when carrying out orders	1	2	3	4	5	N	
19. Displays commitment to the unit's mission and goals	1	2	3	4	5	N	
20. Shows concern for the success of the unit/battalion	1	2	3	4	5	N	
21. Behaves in ways that are consistent with military policies and regulations	1	2	3	4	5	N	
22. Works effectively within the framework of military policies and procedures	1	2	3	4	5	N	
23. Performs extra duties without being told or asked.....	1	2	3	4	5	N	
24. Volunteers for assignments or additional duties.....	1	2	3	4	5	N	
25. Seeks clarification from leadership when necessary.....	1	2	3	4	5	N	
26. Anticipates the needs of the unit.....	1	2	3	4	5	N	
27. Seeks ways to accomplish work when there is no clear solution.....	1	2	3	4	5	N	

							Not Observed
							To a Very Great Extent
							To a Large Extent
							To a Moderate Extent
							To a Small Extent
							Not at all
This person:							
28. Initiates projects that may contribute to or enhance the success of the mission	1	2	3	4	5		N
29. Finds additional productive work to perform when his or her own duties are completed.....	1	2	3	4	5		N
30. Reacts calmly and confidently to changes in plans or unusual circumstances.....	1	2	3	4	5		N
31. Responds quickly to difficult situations.	1	2	3	4	5		N
32. Maintains a flexible approach to accomplishing work	1	2	3	4	5		N
33. Provides quick, clear, and effective direction when faced with changing situations or unexpected events	1	2	3	4	5		N
34. Provides clear structure to others in uncertain or ambiguous situations	1	2	3	4	5		N
35. Works effectively when situations seem uncertain	1	2	3	4	5		N
36. Adjusts goals and priorities in response to changing situations	1	2	3	4	5		N
37. Accurately assesses how to best handle difficult situations and unexpected events	1	2	3	4	5		N
38. Performs excellently in almost all areas	1	2	3	4	5		N
39. Exceeds standards and expectations for performance	1	2	3	4	5		N
40. Sets an example of good performance	1	2	3	4	5		N

Thank you for completing our survey - we really appreciate your time and effort!

Appendix C
Experience Inventory

Experience Inventory

[Administered Online]

Thank you for taking part in our study!

This survey contains 37 behaviors. Read each behavior carefully, and decide which of the response choices best reflects the frequency with which you have engaged in the behavior in the past few years. Then, check the appropriate response choice for that behavior. Be sure to mark one, and only one, response choice for each behavior.

Use the following scale to indicate the frequency with which you have engaged in each of the behaviors:

- 1 = Never
- 2 = Once or Twice
- 3 = Several Times
- 4 = Frequently or Routinely

Respond as accurately and honestly as possible. It is best to work at a fairly rapid pace. Also, it is important to respond to all of the statements.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail then click NEXT>> to continue.

Please indicate the frequency with which you have engaged in each of the following behaviors over the past few years.

1. Made decisions independently in a timely manner.
2. Quickly found effective solutions to problems.
3. Obtained all relevant information before making decisions.
4. Detected problems quickly.
5. Chose an effective course of action based on available facts.
6. Made decisions with confidence and authority.
7. Asked team members for input when necessary to solve a problem.
8. Identified the source of problems in a timely manner.

9. Quickly gained the trust of others.
10. Maintained good working relationships through effective communication.
11. Addressed personal conflicts constructively and in a professional manner.
12. Developed and maintained good working relationships with other military personnel.
13. Actively participated in social and recreational activities arranged for the unit.
14. Treated others with respect regardless of their rank, background, or characteristics.
15. Made an effort to learn and use others' names.
16. Made people feel comfortable about approaching and talking with you.
17. Displayed a sharp, professional appearance while in uniform.
18. Exceeded standards when carrying out orders.
19. Displayed commitment to the unit's mission and goals.
20. Showed concern for the success of the unit/battalion.
21. Behaved in ways that were consistent with military policies and regulations.
22. Worked effectively within the framework of military policies and procedures.
23. Performed extra duties without being told or asked.
24. Volunteered for assignments or additional duties.
25. Sought clarification from leadership when necessary.
26. Anticipated the needs of the unit.
27. Sought ways to accomplish work when there was no clear solution.
28. Initiated projects that contributed to or enhanced the success of the mission.
29. Found additional productive work to perform when you had completed your duties.
30. Reacted calmly and confidently to unusual circumstances or changes in plans.
31. Responded quickly to difficult situations.
32. Maintained a flexible approach to accomplishing work.
33. Provided quick, clear, and effective direction when faced with changing situations or unexpected events.

- 34. Provided clear structure to others in uncertain or ambiguous situations.
- 35. Worked effectively when situations seemed uncertain.
- 36. Adjusted goals and priorities in response to changing situations.
- 37. Accurately assessed how to best handle difficult situations and unexpected events.

Thank you for completing this survey - we appreciate your time and effort!

Appendix D
Revised Action Control Scale

Action Control Scale [Administered Online]

Thank you for taking part in our study!

The following scale is designed to measure your action-state orientation, which includes the degree to which you initiate goal-directed actions, detach from thoughts about interfering goals, and focus on a given task.

Please read each item carefully, and then check the response that is more true of you. Although you may find that both responses are applicable to you or neither response is applicable to you, please select the one that is most typical of you.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail, then click NEXT>> to continue.

For each statement, please check the response that is more true of you.

1. When I know I must finish something soon:
 - a. I have to push myself to get started
 - b. I find it easy to get it done and over with
2. When I have learned a new and interesting game:
 - a. I quickly get tired of it and do something else
 - b. I can really get into it for a long time
3. If I've worked for weeks on one project and then everything goes completely wrong with the project:
 - a. It takes me a long time to adjust myself to it
 - b. It bothers me for a while, but then I don't think about it anymore
4. When I don't have anything in particular to do and am getting bored:
 - a. I have trouble getting up enough energy to do anything at all
 - b. I quickly find something to do
5. When I am getting ready to tackle a difficult problem:
 - a. It feels like I am facing a big mountain that I don't think I can climb
 - b. I look for a way that the problem can be approached in a suitable manner

6. If I had just bought a new piece of equipment (for example, an iPod) and it accidentally fell on the floor and was damaged beyond repair:
 - a. I would manage to get over it quickly
 - b. It would take me a long time to get over it
7. When I have to solve a difficult problem:
 - a. I usually don't have a problem getting started on it
 - b. I have trouble sorting things out in my head so that I can get down to working on the problem
8. If I have to talk to someone about something important and can't find him or her anywhere:
 - a. I can't stop thinking about it, even while I'm doing something else
 - b. I easily forget about it until I see the person
9. When I read an article in the newspaper that interests me:
 - a. I usually remain so interested in the article that I read the entire article
 - b. I still often skip to another article before I've completely finished the first one
10. When I am told that my work has been completely unsatisfactory:
 - a. I don't let it bother me for too long
 - b. I feel paralyzed
11. When I have a lot of important things to do and they all must be done soon:
 - a. I often don't know where to begin
 - b. I find it easy to make a plan and stick to it
12. When one of my co-workers brings up an interesting topic for discussion:
 - a. It can easily develop into a long conversation
 - b. I soon lose interest and want to do something else
13. If I'm stuck in traffic and miss an important appointment:
 - a. At first, it's difficult for me to start to do something else at all
 - b. I quickly forget about it and do something else
14. When I am busy working on an interesting project:
 - a. I need to take frequent breaks and work on other projects
 - b. I can keep working on the same project for a long time
15. When I have to take care of something important which is also unpleasant:
 - a. I do it and get it over with
 - b. It can take a while before I can bring myself to it

16. When something really gets me down:
- a. I have trouble doing anything at all
 - b. I find it easy to distract myself by doing other things
17. When I am facing a big project that has to be done:
- a. I often spend too long thinking about where I should begin
 - b. I don't have any problems getting started
18. When several things go wrong on the same day:
- a. I usually don't know how to deal with it
 - b. I just keep on going as though nothing had happened
19. When I read something I find interesting:
- a. I sometimes still want to put it down and do something else
 - b. I will sit and read it for a long time
20. When I have put all my effort into doing a really good job on something and the whole thing doesn't work out:
- a. I don't have too much difficulty starting something else
 - b. I have trouble doing anything else at all
21. When I have an obligation to do something that is boring and uninteresting:
- a. I do it and get it over with
 - b. It can take a while before I can bring myself to do it
22. When I am trying to learn something new that I want to learn:
- a. I'll keep at it for a long time
 - b. I often feel like I need to take a break and go do something else for a while

Thank you for taking the time to complete this survey - we really appreciate your time and effort!

Appendix E
Military Motives Scale

Military Motives Scale

[Administered Online]

Thank you for taking part in our study!

This survey is designed to measure some of your values, interests, preferences, and attitudes related to your involvement with the military. Please read the instructions included in each section carefully, and then make the appropriate ratings.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail then click NEXT>> to continue.

Job Satisfaction

Response scale:

- 1 = *Very dissatisfied*
- 2 = *Dissatisfied*
- 3 = *Neither Satisfied Nor Dissatisfied*
- 4 = *Satisfied*
- 5 = *Very satisfied*

How satisfied are you with each of the following aspects of your role as an ROTC cadet/midshipman?

1. Level of fulfillment/challenge
2. Amount of enjoyment from role
3. Use of your skills and training
4. Level of competence of unit staff/cadre
5. Level of competence of cadet/midshipman superior
6. Quality of leadership from unit staff/cadre
7. Quality of leadership from cadet/midshipman superior
8. Amount of respect from unit staff/cadre
9. Amount of respect from cadet/midshipman superior

10. Opportunity to select duties or training of your choice
11. Assignments to duties offering technical or professional development
12. Amount of compensation (i.e., scholarships, living expenses, additional allowances)
13. Length of working hours
14. Level of recognition for your accomplishments
15. Level of fairness in how your performance is evaluated

Military Values

Response scale:

- 0 = *Not at all important*
- 1 = *Slightly important*
- 2 = *Moderately important*
- 3 = *Quite important*
- 4 = *Very important*

How important is each of the following values to you?

1. Loyalty to the United States military
2. Loyalty to your unit
3. Taking responsibility for your actions and decisions
4. Putting what is good for your fellow cadets/midshipmen, the unit, and the nation before your own interests ("service before self")
5. Dedication to serving the United States, even to risking your life in its defense
6. Commitment to working as a member of a team
7. Dedication to learning your job and doing it well
8. Personal drive to succeed in your work and advance
9. Being honest, open, and truthful
10. Being disciplined and courageous in battle
11. Standing up for what you believe is right
12. Working with others tactfully and with military courtesy

13. Exhibiting excellent military bearing and appearance
14. High moral standards both on-duty and off-duty
15. Building and maintaining physical fitness and stamina

Organizational Commitment

Response scale:

- 1 = *Strongly Disagree*
- 2 = *Disagree*
- 3 = *Neither Agree nor Disagree*
- 4 = *Agree*
- 5 = *Strongly Agree*

Please indicate the extent to which you agree or disagree with each of the following statements:

1. I feel like I fit in with my peers in the ROTC.
2. The ROTC has a great deal of personal meaning for me.
3. I feel a strong sense of belonging to the ROTC.
4. I feel emotionally attached to the military.
5. It would be too costly for me to leave the ROTC in the near future.
6. I am afraid of what might happen if I quit the ROTC.
7. Too much in my life would be interrupted if I decided to leave the ROTC.
8. One of the problems of leaving the ROTC would be the lack of available alternatives.

Interests

Response scale:

- 1 = *I would dislike this situation very much*
- 2 = *I would dislike this situation*
- 3 = *I would neither like nor dislike this situation*
- 4 = *I would like this situation*
- 5 = *I would like this situation very much*

For each of the following behaviors, imagine you are in a situation where you have to engage in the behavior. To what extent would you enjoy that situation?

1. Make a decision without assistance based on available facts.
2. Find an effective solution to a problem.
3. Obtain relevant information before making a decision.
4. Detect problems when they exist.
5. Ask team members for input to solve a problem.
6. Identify the cause of a problem.
7. Gain the trust of others.
8. Maintain good working relationships through effective communication.
9. Address personal conflicts with others.
10. Develop and maintain good working relationships with other military personnel.
11. Participate in social and recreational activities arranged for the unit.
12. Treat others with respect regardless of their rank, background, or characteristics.
13. Learn and use others' names.
14. Make people feel comfortable about approaching and talking with you.
15. Display a sharp, professional appearance while in uniform.
16. Exceed standards when carrying out orders.
17. Display commitment to the unit's mission and goals.
18. Show concern for the success of the unit.

19. Follow military policies and regulations.
20. Perform an extra duty without being told or asked.
21. Volunteer for an assignment or additional duties.
22. Seek clarification from leadership.
23. Anticipate the needs of the unit.
24. Seek a way to accomplish work when there is no clear solution.
25. Initiate a project that may contribute to or enhance the success of a mission.
26. Find additional productive work to perform when your own duties are completed.
27. React to changes in plans, unusual circumstances, or difficult situations.
28. Maintain a flexible approach to accomplishing work.
29. Provide direction to others when faced with a changing situation or an unexpected event.
30. Provide structure to others in an uncertain or ambiguous situation.
31. Work in a situation that seems uncertain.
32. Adjust goals and priorities in response to a changing situation.
33. Assess how to best handle a difficult situation or an unexpected event.

Thank you for completing our survey - we really appreciate your time and effort!

Appendix F
Citizenship Motives Scale

Citizenship Motives Scale

Identification Number _____

Citizenship Motives Scale

Instructions

This survey describes three different dimensions of being a good “organizational citizen.” These are behaviors that do not directly contribute to getting the core technical work of the organization done, but they contribute to the effective functioning of the organization when people elect to perform them.

Following the definition of each type of citizenship behavior, there are a number of statements describing possible reasons why a person would engage in that behavior. We would like you to rate how important each statement is to your decision to engage in the type of behavior described, using the following rating scale:

- 1 = *Not at all important*
- 2 = *Slightly important*
- 3 = *Moderately important*
- 4 = *Quite important*
- 5 = *Very important*

To complete this survey:

- Read the definition of the first dimension of being a good organizational citizen and review the sample behaviors carefully.
- Keeping the definition and sample behaviors in mind, rate how important each statement is to your decision to perform similar behaviors. Circle the number to the right of each statement that reflects your rating.
- Repeat these two steps for the second and third dimensions of being a good organizational citizen.

Please review the following definition carefully before making your ratings.

MAINTAINING GOOD WORKING RELATIONSHIPS

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.

Example Behaviors:

- Develops and maintains good working relationships with other military personnel.
- Treats others with respect regardless of their rank, background, or characteristics.
- Makes people feel comfortable about approaching and talking with him or her.
- Quickly gains the trust of others.
- Maintains good working relationships through effective communication.
- Addresses personal conflicts constructively and in a professional manner.
- Actively participates in social and recreational activities arranged for the unit.
- Makes an effort to learn and use others' names.

How important is each of the following motive statements in your decision to engage in behaviors that maintain good working relationships?

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
1. Because I want to understand how the organization works.	1	2	3	4	5
2. Because I care what happens to the organization.	1	2	3	4	5
3. Because I want to be fully involved in the organization.	1	2	3	4	5
4. Because I feel pride in the organization.	1	2	3	4	5
5. Because the organization values my work.	1	2	3	4	5
6. Because I have a genuine interest in my work.	1	2	3	4	5
7. Because I want to be a well-informed cadet/midshipman.	1	2	3	4	5
8. To keep up with the latest developments in the organization.	1	2	3	4	5
9. Because the organization treats me fairly.	1	2	3	4	5
10. Because I am committed to the organization.	1	2	3	4	5
11. Because I feel it is important to help those in need.	1	2	3	4	5
12. Because I believe in being courteous to others.	1	2	3	4	5
13. Because I am concerned about other people's feelings.	1	2	3	4	5
14. Because I want to help my fellow cadets/midshipmen in any way I can.	1	2	3	4	5

15. Because it is easy for me to be helpful.
16. Because I like interacting with my fellow cadets/midshipmen.
17. To have fun with my fellow cadets/midshipmen.
18. To get to know my fellow cadets/midshipmen better.
19. To be friendly with others.
20. Because I can put myself in other people's shoes.
21. To avoid looking bad in front of others.
22. To avoid looking lazy.
23. To look better than my fellow cadets/midshipmen.
24. To avoid a reprimand from my superior.
25. Because I don't want to appear irresponsible.
26. To look like I am busy.
27. To stay out of trouble.
28. Because rewards are important to me.
29. To impress my fellow cadets/midshipmen.

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

Please review the following definition carefully before making your ratings.

ORGANIZATIONAL COMMITMENT

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.

Example Behaviors:

- Displays a sharp, professional appearance while in uniform.
- Exceeds standards when carrying out orders.
- Displays commitment to the unit's mission and goals.
- Shows concern for the success of the unit/battalion.
- Behaves in ways that are consistent with military policies and regulations.
- Works effectively within the framework of military policies and procedures.

How important is each of the following motive statements in your decision to engage in organizational commitment behaviors?

30. Because I want to understand how the organization works.

31. Because I care what happens to the organization.

32. Because I want to be fully involved in the organization.

33. Because I feel pride in the organization.

34. Because the organization values my work.

35. Because I have a genuine interest in my work.

36. Because I want to be a well-informed cadet/midshipman.

37. To keep up with the latest developments in the organization.

38. Because the organization treats me fairly.

39. Because I am committed to the organization.

40. Because I feel it is important to help those in need.

41. Because I believe in being courteous to others.

42. Because I am concerned about other people's feelings.

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
	1	2	3	4	5
30. Because I want to understand how the organization works.	1	2	3	4	5
31. Because I care what happens to the organization.	1	2	3	4	5
32. Because I want to be fully involved in the organization.	1	2	3	4	5
33. Because I feel pride in the organization.	1	2	3	4	5
34. Because the organization values my work.	1	2	3	4	5
35. Because I have a genuine interest in my work.	1	2	3	4	5
36. Because I want to be a well-informed cadet/midshipman.	1	2	3	4	5
37. To keep up with the latest developments in the organization.	1	2	3	4	5
38. Because the organization treats me fairly.	1	2	3	4	5
39. Because I am committed to the organization.	1	2	3	4	5
40. Because I feel it is important to help those in need.	1	2	3	4	5
41. Because I believe in being courteous to others.	1	2	3	4	5
42. Because I am concerned about other people's feelings.	1	2	3	4	5

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
43. Because I want to help my fellow cadets/midshipmen in any way I can.	1	2	3	4	5
44. Because it is easy for me to be helpful.	1	2	3	4	5
45. Because I like interacting with my fellow cadets/midshipmen.	1	2	3	4	5
46. To have fun with my fellow cadets/midshipmen.	1	2	3	4	5
47. To get to know my fellow cadets/midshipmen better.	1	2	3	4	5
48. To be friendly with others.	1	2	3	4	5
49. Because I can put myself in other people's shoes.	1	2	3	4	5
50. To avoid looking bad in front of others.	1	2	3	4	5
51. To avoid looking lazy.	1	2	3	4	5
52. To look better than my fellow cadets/midshipmen.	1	2	3	4	5
53. To avoid a reprimand from my superior.	1	2	3	4	5
54. Because I don't want to appear irresponsible.	1	2	3	4	5
55. To look like I am busy.	1	2	3	4	5
56. To stay out of trouble.	1	2	3	4	5
57. Because rewards are important to me.	1	2	3	4	5
58. To impress my fellow cadets/midshipmen.	1	2	3	4	5

Please review the following definition carefully before making your ratings.

SHOWING INITIATIVE

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.

Example Behaviors:

- Performs extra duties without being told or asked.
- Volunteers for assignments or additional duties.
- Seeks clarification from leadership when necessary.
- Anticipates the needs of the unit.
- Seeks ways to accomplish work when there is no clear solution.
- Initiates projects that may contribute to or enhance the success of the mission.
- Finds additional productive work to perform when his or her own duties are completed.

How important is each of the following motive statements in your decision to engage in behaviors that show initiative?

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
59. Because I want to understand how the organization works.	1	2	3	4	5
60. Because I care what happens to the organization.	1	2	3	4	5
61. Because I want to be fully involved in the organization.	1	2	3	4	5
62. Because I feel pride in the organization.	1	2	3	4	5
63. Because the organization values my work.	1	2	3	4	5
64. Because I have a genuine interest in my work.	1	2	3	4	5
65. Because I want to be a well-informed cadet/midshipman.	1	2	3	4	5
66. To keep up with the latest developments in the organization.	1	2	3	4	5
67. Because the organization treats me fairly.	1	2	3	4	5
68. Because I am committed to the organization.	1	2	3	4	5
69. Because I feel it is important to help those in need.	1	2	3	4	5
70. Because I believe in being courteous to others.	1	2	3	4	5
71. Because I am concerned about other people's feelings.	1	2	3	4	5

	Very Important				
	Quite Important				
	Moderately Important				
	Slightly Important				
	Not at all Important				
72. Because I want to help my fellow cadets/midshipmen in any way I can.	1	2	3	4	5
73. Because it is easy for me to be helpful.	1	2	3	4	5
74. Because I like interacting with my fellow cadets/midshipmen.	1	2	3	4	5
75. To have fun with my fellow cadets/midshipmen.	1	2	3	4	5
76. To get to know my fellow cadets/midshipmen better.	1	2	3	4	5
77. To be friendly with others.	1	2	3	4	5
78. Because I can put myself in other people's shoes.	1	2	3	4	5
79. To avoid looking bad in front of others.	1	2	3	4	5
80. To avoid looking lazy.	1	2	3	4	5
81. To look better than my fellow cadets/midshipmen.	1	2	3	4	5
82. To avoid a reprimand from my superior.	1	2	3	4	5
83. Because I don't want to appear irresponsible.	1	2	3	4	5
84. To look like I am busy.	1	2	3	4	5
85. To stay out of trouble.	1	2	3	4	5
86. Because rewards are important to me.	1	2	3	4	5
87. To impress my fellow cadets/midshipmen.	1	2	3	4	5

Thank you for completing our survey - we really appreciate your time and effort!

Appendix G
Proactive Cognitions Scale

Proactive Cognitions Scale

[Administered online]

Thank you for taking part in our study!

This survey is designed to measure your expectancy, self-efficacy, and commitment to behaviors that are likely to result in beneficial outcomes. Expectancy consists of your perceptions of the probability of an action resulting in beneficial outcomes. Self-efficacy consists of your perceptions of how well you might perform a given action. Commitment is your dedication to carrying out behaviors that may yield benefits.

Please read the instructions included in each section carefully, and then make the appropriate ratings.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail, then click NEXT>> to continue.

Expectancy – Part I

This section contains 37 behaviors and a rating scale for each behavior. Read each behavior carefully, and select the answer corresponding to your response choice for that behavior. Be sure to select one, and only one, response choice for each behavior.

For each of the following behaviors, first consider the probability of achieving one or more of the following outcomes if the behavior is performed:

- The unit would be more successful.
- I would receive personal recognition (e.g., praise, award).
- My unit would be favorably recognized.
- I would advance in my career.
- My peers would be pleased.
- I would avoid punishment.
- I would benefit personally at a later time (e.g., a future favor, time off).

Next, use the following scale to rate the probability of achieving one or more of the outcomes above:

- 1 = Highly Improbable
- 2 = Somewhat Improbable
- 3 = Neither Probable nor Improbable
- 4 = Somewhat Probable
- 5 = Highly Probable

Respond as accurately and honestly as possible. It is best to work at a fairly rapid pace. Also, it is important to respond to all of the statements.

1. Make decisions independently in a timely manner.
2. Find effective solutions to problems quickly.
3. Obtain all relevant information before making decisions.
4. Detect problems quickly.
5. Choose an effective course of action based on available facts.
6. Make decisions with confidence and authority.
7. Ask team members for input when necessary to solve a problem.
8. Identify the source of problems in a timely manner.
9. Quickly gain the trust of others.
10. Maintain good working relationships through effective communication.
11. Address personal conflicts constructively and in a professional manner.
12. Develop and maintain good working relationships with other military personnel.
13. Actively participate in social and recreational activities arranged for the unit.
14. Treat others with respect regardless of their rank, background, or characteristics.
15. Make an effort to learn and use others' names.
16. Make people feel comfortable about approaching and talking with you.
17. Display a sharp, professional appearance while in uniform.
18. Exceed standards when carrying out orders.
19. Display commitment to the unit's mission and goals.
20. Show concern for the success of the unit/battalion.
21. Behave in ways that are consistent with military policies and regulations.
22. Work effectively within the framework of military policies and procedures.
23. Perform extra duties without being told or asked.
24. Volunteer for assignments or additional duties.

25. Seek clarification from leadership when necessary.
26. Anticipate the needs of the unit.
27. Seek ways to accomplish work when there is no clear solution.
28. Initiate projects that contribute to or enhance the success of the mission.
29. Find additional work to perform when you have completed your duties.
30. React calmly and confidently to changes in plans or unusual circumstances.
31. Respond quickly to difficult situations.
32. Maintain a flexible approach to accomplishing work.
33. Provide quick, clear, and effective direction when faced with changing situations or unexpected events.
34. Provide clear structure to others in uncertain or ambiguous situations.
35. Work effectively when situations seem uncertain.
36. Adjust goals and priorities in response to changing situations.
37. Accurately assess how to best handle difficult situations and unexpected events.

Self-Efficacy – Part II

This section contains 37 behaviors and a rating scale for each behavior. Read each behavior carefully, and select the answer corresponding to your response choice for that behavior. Be sure to select one, and only one, response choice for each behavior.

For each of the following behaviors, rate how effectively you would perform the behavior.

Use the following scale to indicate how effectively you would perform the behavior:

- 1 = Highly Ineffective
- 2 = Somewhat Ineffective
- 3 = Neither Effective nor Ineffective
- 4 = Somewhat Effective
- 5 = Highly Effective

Respond as accurately and honestly as possible. It is best to work at a fairly rapid pace. Also, it is important to respond to all of the statements.

1. Make decisions independently in a timely manner.
2. Find effective solutions to problems quickly.
3. Obtain all relevant information before making decisions.
4. Detect problems quickly.
5. Choose an effective course of action based on available facts.
6. Make decisions with confidence and authority.
7. Ask team members for input when necessary to solve a problem.
8. Identify the source of problems in a timely manner.
9. Quickly gain the trust of others.
10. Maintain good working relationships through effective communication.
11. Address personal conflicts constructively and in a professional manner.
12. Develop and maintain good working relationships with other military personnel.
13. Actively participate in social and recreational activities arranged for the unit.
14. Treat others with respect regardless of their rank, background, or characteristics.
15. Make an effort to learn and use others' names.

16. Make people feel comfortable about approaching and talking with you.
17. Display a sharp, professional appearance while in uniform.
18. Exceed standards when carrying out orders.
19. Display commitment to the unit's mission and goals.
20. Show concern for the success of the unit/battalion.
21. Behave in ways that are consistent with military policies and regulations.
22. Work effectively within the framework of military policies and procedures.
23. Perform extra duties without being told or asked.
24. Volunteer for assignments or additional duties.
25. Seek clarification from leadership when necessary.
26. Anticipate the needs of the unit.
27. Seek ways to accomplish work when there is no clear solution.
28. Initiate projects that contribute to or enhance the success of the mission.
29. Find additional work to perform when you have completed your duties.
30. React calmly and confidently to changes in plans or unusual circumstances.
31. Respond quickly to difficult situations.
32. Maintain a flexible approach to accomplishing work.
33. Provide quick, clear, and effective direction when faced with changing situations or unexpected events.
34. Provide clear structure to others in uncertain or ambiguous situations.
35. Work effectively when situations seem uncertain.
36. Adjust goals and priorities in response to changing situations.
37. Accurately assess how to best handle difficult situations and unexpected events.

Commitment – Part III

This section contains 37 behaviors and a rating scale for each behavior. Read each behavior carefully, and select the answer corresponding to your response choice for that behavior. Be sure to select one, and only one, response choice for each behavior.

For each of the following behaviors, rate how committed you are to performing the behavior during the semester.

Use the following scale to indicate how committed you are to performing the behavior during the semester:

- 1 = Not at All Committed – I definitely will not do this.
- 2 = Slightly Committed – I probably will not do this.
- 3 = Somewhat Committed – I may or may not do this.
- 4 = Committed – I will probably do this.
- 5 = Very Committed – I will definitely do this.

Respond as accurately and honestly as possible. It is best to work at a fairly rapid pace. Also, it is important to respond to all of the statements.

1. Make decisions independently in a timely manner.
2. Find effective solutions to problems quickly.
3. Obtain all relevant information before making decisions.
4. Detect problems quickly.
5. Choose an effective course of action based on available facts.
6. Make decisions with confidence and authority.
7. Ask team members for input when necessary to solve a problem.
8. Identify the source of problems in a timely manner.
9. Quickly gain the trust of others.
10. Maintain good working relationships through effective communication.
11. Address personal conflicts constructively and in a professional manner.
12. Develop and maintain good working relationships with other military personnel.
13. Actively participate in social and recreational activities arranged for the unit.
14. Treat others with respect regardless of their rank, background, or characteristics.

15. Make an effort to learn and use others' names.
16. Make people feel comfortable about approaching and talking with you.
17. Display a sharp, professional appearance while in uniform.
18. Exceed standards when carrying out orders.
19. Display commitment to the unit's mission and goals.
20. Show concern for the success of the unit/battalion.
21. Behave in ways that are consistent with military policies and regulations.
22. Work effectively within the framework of military policies and procedures.
23. Perform extra duties without being told or asked.
24. Volunteer for assignments or additional duties.
25. Seek clarification from leadership when necessary.
26. Anticipate the needs of the unit.
27. Seek ways to accomplish work when there is no clear solution.
28. Initiate projects that contribute to or enhance the success of the mission.
29. Find additional work to perform when you have completed your duties.
30. React calmly and confidently to changes in plans or unusual circumstances.
31. Respond quickly to difficult situations.
32. Maintain a flexible approach to accomplishing work.
33. Provide quick, clear, and effective direction when faced with changing situations or unexpected events.
34. Provide clear structure to others in uncertain or ambiguous situations.
35. Work effectively when situations seem uncertain.
36. Adjust goals and priorities in response to changing situations.
37. Accurately assess how to best handle difficult situations and unexpected events.

Thank you for completing our survey - we appreciate your time and effort!

Appendix H
Self-Regulation Inventory

Self-Regulation Inventory

[Administered Online]

Instructions

The purpose of this survey is to collect information about your recent ROTC experiences related to the five performance dimensions of interest in this study. More specifically, we would like you to recall your most recent behavior related to each performance dimension and answer several questions about what you thought and did while performing that behavior.

Do not worry about recalling times where your behavior was particularly effective or ineffective. Instead, for each performance dimension, please focus on remembering the most recent time in which you encountered a situation where you could perform a relevant behavior.

The survey will take about 20 minutes and you will receive \$5 for your participation. During this study, you will be asked to complete a total of six surveys of this type. If you participate in each survey opportunity, you will receive a \$10 bonus. Thus, you will earn a total of \$40 for completing all six surveys.

For each performance dimension:

- *Read the definition and review the sample behaviors carefully.*
- *Think back over the past month. What was the most recent ROTC-related situation when you performed a behavior related to the performance dimension?*
- *Keeping that instance in mind, use the rating scale to respond to the questions.*

Rating Scale

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree Nor Disagree
- 4 = Agree
- 5 = Strongly Agree

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail. Then click NEXT>> to continue.

Please read the following definition and review the sample behaviors.

Decision Making/Problem Solving

Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions; generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.

Sample Behaviors

- Makes decisions without assistance in a timely manner.
 - Finds effective solutions to problems quickly when necessary.
 - Obtains all relevant information before making decisions.
 - Detects problems quickly when they exist.
 - Chooses an effective course of action based on available facts.
 - Makes decisions with confidence and authority.
 - Asks team members for input when necessary to solve a problem.
 - Identifies the causes of problems in a timely manner.
-

Thinking back over the last month, when did you most recently experience a situation in which you could make a decision or solve a problem related to ROTC? Take a moment to think about that time. Visualize and walk yourself through the experience. What was the situation leading up to the experience? What did you do?

[Note: Responses to the above questions will not be collected from research participants.]

Based on this experience, please complete the following ratings.

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I found it difficult to concentrate.	1	2	3	4	5
2. I thought about how poorly I was doing.	1	2	3	4	5
3. I had to overcome some bad habits.	1	2	3	4	5
4. Failure to manage my negative emotions hurt how well I did.	1	2	3	4	5
5. I let distractions undermine my performance.	1	2	3	4	5
6. I thought about other things.	1	2	3	4	5
7. I imagined how awful failing would be.	1	2	3	4	5

During this experience...	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
8. My performance was hurt because I just kept doing the same thing, even though it was not working well.	1	2	3	4	5
9. My performance suffered because I could not bounce back from unpleasant emotions I experienced.	1	2	3	4	5
10. I felt distracted.	1	2	3	4	5
11. I became frustrated with myself.	1	2	3	4	5
12. My work routines helped me perform well.	1	2	3	4	5
13. I could have done better if I had paid attention to my progress.	1	2	3	4	5
14. My success was limited because I could not manage to focus on what I was doing.	1	2	3	4	5
15. I became "stressed out" with worry and anxiety.	1	2	3	4	5
16. My mind wandered to other things.	1	2	3	4	5
17. My habitual way of doing things interfered with my performance.	1	2	3	4	5

Please read the following definition and review the sample behaviors.

Maintaining Good Working Relationships

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.

Sample Behaviors

- Quickly gains the trust of others.
 - Maintains good working relationships through effective communication.
 - Addresses personal conflicts constructively and in a professional manner.
 - Develops and maintains good working relationships with other military personnel.
 - Actively participates in social and recreational activities arranged for the unit.
 - Treats others with respect regardless of their rank, background, or characteristics.
 - Makes an effort to learn and use others' names.
 - Makes people feel comfortable about approaching and talking with him or her.
-

Thinking back over the last month, when did you most recently experience a situation in which you could work to maintain good work relationships related to ROTC? Take a moment to think about that time. Visualize and walk yourself through the experience. What was the situation leading up to the experience? What did you do?

[Note: Responses to the above questions will not be collected from research participants.]

Based on this experience, please complete the following ratings.

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
18. I found it difficult to concentrate.	1	2	3	4	5
19. I thought about how poorly I was doing.	1	2	3	4	5
20. I had to overcome some bad habits.	1	2	3	4	5
21. Failure to manage my negative emotions hurt how well I did.	1	2	3	4	5
22. I let distractions undermine my performance.	1	2	3	4	5
23. I thought about other things.	1	2	3	4	5
24. I imagined how awful failing would be.	1	2	3	4	5

During this experience...	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
25. My performance was hurt because I just kept doing the same thing, even though it was not working well.	1	2	3	4	5
26. My performance suffered because I could not bounce back from unpleasant emotions I experienced.	1	2	3	4	5
27. I felt distracted.	1	2	3	4	5
28. I became frustrated with myself.	1	2	3	4	5
29. My work routines helped me perform well.	1	2	3	4	5
30. I could have done better if I had paid attention to my progress.	1	2	3	4	5
31. My success was limited because I could not manage to focus on what I was doing.	1	2	3	4	5
32. I became "stressed out" with worry and anxiety.	1	2	3	4	5
33. My mind wandered to other things.	1	2	3	4	5
34. My habitual way of doing things interfered with my performance.	1	2	3	4	5

Please read the following definition and review the sample behaviors.

Organizational Commitment

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.

Sample Behaviors

- Displays a sharp, professional appearance while in uniform.
 - Exceeds standards when carrying out orders.
 - Displays commitment to the unit's mission and goals.
 - Shows concern for the success of the unit/battalion.
 - Behaves in ways that are consistent with military policies and regulations.
 - Works effectively within the framework of military policies and procedures.
-

Thinking back over the last month, when did you most recently experience a situation in which you could show your organizational commitment to ROTC? Take a moment to think about that time. Visualize and walk yourself through the experience. What was the situation leading up to the experience? What did you do?

[Note: Responses to the above questions will not be collected from research participants.]

Based on this experience, please complete the following ratings.

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
35. I found it difficult to concentrate.	1	2	3	4	5
36. I thought about how poorly I was doing.	1	2	3	4	5
37. I had to overcome some bad habits.	1	2	3	4	5
38. Failure to manage my negative emotions hurt how well I did.	1	2	3	4	5
39. I let distractions undermine my performance.	1	2	3	4	5
40. I thought about other things.	1	2	3	4	5
41. I imagined how awful failing would be.	1	2	3	4	5
42. My performance was hurt because I just kept doing the same thing, even though it was not working well.	1	2	3	4	5

During this experience...	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
43. My performance suffered because I could not bounce back from unpleasant emotions I experienced.	1	2	3	4	5
44. I felt distracted.	1	2	3	4	5
45. I became frustrated with myself.	1	2	3	4	5
46. My work routines helped me perform well.	1	2	3	4	5
47. I could have done better if I had paid attention to my progress.	1	2	3	4	5
48. My success was limited because I could not manage to focus on what I was doing.	1	2	3	4	5
49. I became "stressed out" with worry and anxiety.	1	2	3	4	5
50. My mind wandered to other things.	1	2	3	4	5
51. My habitual way of doing things interfered with my performance.	1	2	3	4	5

Please read the following definition and review the sample behaviors.

Showing Initiative

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.

Sample Behaviors

- Performs extra duties without being told or asked.
 - Volunteers for assignments or additional duties.
 - Seeks clarification from leadership when necessary.
 - Anticipates the needs of the unit.
 - Seeks ways to accomplish work when there is no clear solution.
 - Initiates projects that may contribute to or enhance the success of the mission.
 - Finds additional productive work to perform when his or her own duties are completed.
-

Thinking back over the last month, when did you most recently experience a situation in which you could show initiative related to ROTC? Take a moment to think about that time. Visualize and walk yourself through the experience. What was the situation leading up to the experience? What did you do?

[Note: Responses to the above questions will not be collected from research participants.]

Based on this experience, please complete the following ratings.

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
52. I found it difficult to concentrate.	1	2	3	4	5
53. I thought about how poorly I was doing.	1	2	3	4	5
54. I had to overcome some bad habits.	1	2	3	4	5
55. Failure to manage my negative emotions hurt how well I did.	1	2	3	4	5
56. I let distractions undermine my performance.	1	2	3	4	5
57. I thought about other things.	1	2	3	4	5
58. I imagined how awful failing would be.	1	2	3	4	5

During this experience...	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither Agree nor Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
59. My performance was hurt because I just kept doing the same thing, even though it was not working well.	1	2	3	4	5
60. My performance suffered because I could not bounce back from unpleasant emotions I experienced.	1	2	3	4	5
61. I felt distracted.	1	2	3	4	5
62. I became frustrated with myself.	1	2	3	4	5
63. My work routines helped me perform well.	1	2	3	4	5
64. I could have done better if I had paid attention to my progress.	1	2	3	4	5
65. My success was limited because I could not manage to focus on what I was doing.	1	2	3	4	5
66. I became "stressed out" with worry and anxiety.	1	2	3	4	5
67. My mind wandered to other things.	1	2	3	4	5
68. My habitual way of doing things interfered with my performance.	1	2	3	4	5

Please read the following definition and review the sample behaviors.

Adapting to Uncertain or Changing Situations

Readily and easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.

Sample Behaviors

- Reacts calmly and confidently to changes in plans or unusual circumstances.
 - Responds quickly to difficult situations.
 - Maintains a flexible approach to accomplishing work.
 - Provides quick, clear, and effective direction when faced with changing situations or unexpected events.
 - Provides clear structure to others in uncertain or ambiguous situations.
 - Works effectively when situations seem uncertain.
 - Adjusts goals and priorities in response to changing situations.
 - Accurately assesses how to best handle difficult situations and unexpected events.
-

Thinking back over the last month, when did you most recently experience a situation in which you could adapt to uncertain or changing situations related to ROTC? Take a moment to think about that time. Visualize and walk yourself through the experience. What was the situation leading up to the experience? What did you do?

[Note: Responses to the above questions will not be collected from research participants.]

Based on this experience, please complete the following ratings.

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
69. I found it difficult to concentrate.	1	2	3	4	5
70. I thought about how poorly I was doing.	1	2	3	4	5
71. I had to overcome some bad habits.	1	2	3	4	5
72. Failure to manage my negative emotions hurt how well I did.	1	2	3	4	5
73. I let distractions undermine my performance.	1	2	3	4	5
74. I thought about other things.	1	2	3	4	5

During this experience...	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
75. I imagined how awful failing would be.	1	2	3	4	5
76. My performance was hurt because I just kept doing the same thing, even though it was not working well.	1	2	3	4	5
77. My performance suffered because I could not bounce back from unpleasant emotions I experienced.	1	2	3	4	5
78. I felt distracted.	1	2	3	4	5
79. I became frustrated with myself.	1	2	3	4	5
80. My work routines helped me perform well.	1	2	3	4	5
81. I could have done better if I had paid attention to my progress.	1	2	3	4	5
82. My success was limited because I could not manage to focus on what I was doing.	1	2	3	4	5
83. I became "stressed out" with worry and anxiety.	1	2	3	4	5
84. My mind wandered to other things.	1	2	3	4	5
85. My habitual way of doing things interfered with my performance.	1	2	3	4	5

Thank you for taking part in our study!

Appendix I
Work Habits Scale

Work Habits Scale

[Administered Online]

In this survey, you are presented with 37 behaviors that are relevant to performance as an ROTC cadet or midshipman. For each of these behaviors, you will be asked to indicate how much your habits or routines help or interfere with the behavior.

Habits are patterns of behavior that people learn over time that can either help or interfere with the performance of work-related behaviors. They are stylistic ways of dealing with different situations that you may encounter, but they are not necessarily the best or most effective ways of dealing with these situations. Habits are your typical way of handling a situation, not necessarily what you would do if you were carefully selecting the tactics to use to achieve a particular goal. The following examples illustrate how habits may help or hurt with the performance of behaviors.

Example 1: Consider the behavior of “getting to work on time.” Chris sets the alarm each day, allows plenty of time to drive to work, and parks in the same place. Chris’ habitual way of doing things facilitates getting to work on time. In contrast, Pat does not use an alarm clock and frequently misses the bus to work. Pat’s habits interfere with the behavior “getting to work on time.”

Example 2: A behavior relevant to performing well in some college courses is: “Excelling on class presentations.” Tyler makes a habit of meeting with the teaching assistant or professor to clarify what is expected and has a system for prioritizing the importance of information to present. These habits all help Tyler excel on class presentations. Alex always reviews class notes and includes all related material in presentations. Alex also routinely practices presentations in front of peers before delivering them in class. The first habit ensures that Alex’s class presentations are comprehensive, but sometimes makes them too long. The second habit generally helps Alex do well on presentations.

These examples show:

- Multiple habits may influence the performance of one behavior.
- Habits are the typical or routine way people approach situations, not necessarily the most effective way of handling situations.
- Habits may involve consciously processing information (e.g., having a system for prioritizing the importance of information), but are implemented without much thought when a situation arises or a behavior is needed.

*Please use the following rating scale to describe the extent to which **your habitual way of doing things** helps or interferes with each behavior. Note that we are not asking you to rate how well you perform each behavior. Please focus on how your habits help or interfere with each behavior.*

- 1 = Interferes a great deal
- 2 = Interferes a moderate amount
- 3 = Interferes a little
- 4 = Neither interferes nor helps
- 5 = Helps a little
- 6 = Helps a moderate amount
- 7 = Helps a great deal

When rating a particular behavior, please consider situations you've encountered in which you had the opportunity to perform the behavior. Do you have a habitual way of approaching those situations? If not, then you would choose 4 (Neither interferes nor helps) because your habits have no influence on this behavior.

If your habits would help you to perform this behavior, then you would choose 5, 6, or 7, depending on the degree to which your habits would facilitate that behavior.

If your habits would make it difficult for you to perform this behavior, then you would choose 1, 2, or 3, depending on the degree to which your habits would interfere with that behavior.

Before being asked to rate the behaviors, you will be prompted to think about your habitual ways of approaching situations related to those behaviors. Please take a few minutes to let us know what your habits are. This will both help you prepare to complete the ratings and provide valuable information about the habits people have that facilitate or interfere with performing certain sets of behaviors.

If you are unable to complete the survey in one sitting, you may exit the survey and return later to finish where you left off. Your responses on each page will be saved as soon as you advance by clicking NEXT>>.

Please enter your ID number from the information sheet you were given at the in-person data collection session or from your reminder e-mail then click NEXT>> to continue.

Please review the following definition of **Decision Making/Problem Solving**:

Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions; generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.

What habits or routines do you have that help you to make good decisions or solve problems effectively? That is, what routine or typical ways of behaving make it easier for you to make a decision or solve a problem?

What habits or routines do you have that interfere with your ability to make good decisions or solve problems effectively? That is, what routine or typical ways of behaving do you need to overcome because they make it difficult to make a decision or solve a problem?

For each of the following behaviors, please rate the extent to which your habitual way of doing things helps or interferes with performing the behavior:

[Rating scale: 1 = Interferes a great deal
2 = Interferes a moderate amount
3 = Interferes a little
4 = Neither interferes nor helps
5 = Helps a little
6 = Helps a moderate amount
7 = Helps a great deal]

1. Making decisions without assistance in a timely manner.
2. Finding effective solutions to problems quickly when necessary.
3. Obtaining all relevant information before making decisions.
4. Detecting problems quickly when they exist.
5. Choosing an effective course of action based on available facts.
6. Making decisions with confidence and authority.
7. Asking team members for input when necessary to solve a problem.
8. Identifying the causes of problems in a timely manner.

Please review the following definition of **Maintaining Good Working Relationships**:

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.

What habits or routines do you have that help you to maintain good working relationships? That is, what routine or typical ways of behaving make it easier for you to work well and develop effective relationships with others?

What habits or routines do you have that interfere with your ability to maintain good working relationships? That is, what routine or typical ways of behaving do you need to overcome because they make it difficult to work well and develop effective relationships with others?

For each of the following behaviors, please rate the extent to which your habitual way of doing things helps or interferes with performing the behavior:

[Rating scale: 1 = Interferes a great deal
2 = Interferes a moderate amount
3 = Interferes a little
4 = Neither interferes nor helps
5 = Helps a little
6 = Helps a moderate amount
7 = Helps a great deal]

1. Quickly gaining the trust of others.
2. Maintaining good working relationships through effective communication.
3. Addressing personal conflicts constructively and in a professional manner.
4. Developing and maintaining good working relationships with other military personnel.
5. Actively participating in social and recreational activities arranged for the unit.
6. Treating others with respect regardless of their rank, background, or characteristics.
7. Making an effort to learn and use others' names.
8. Making people feel comfortable about approaching and talking with you.

*Please review the following definition of **Organizational Commitment**:*

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.

What habits or routines do you have that help you to display organizational commitment? That is, what routine or typical ways of behaving make it easier for you to show your commitment to ROTC?

What habits or routines do you have that interfere with your ability to display organizational commitment? That is, what routine or typical ways of behaving do you need to overcome because they make it difficult to show your commitment to ROTC?

For each of the following behaviors, please rate the extent to which your habitual way of doing things helps or interferes with performing the behavior:

[Rating scale: 1 = Interferes a great deal
2 = Interferes a moderate amount
3 = Interferes a little
4 = Neither interferes nor helps
5 = Helps a little
6 = Helps a moderate amount
7 = Helps a great deal]

1. Displaying a sharp, professional appearance while in uniform.
2. Exceeding standards when carrying out orders.
3. Displaying commitment to the unit's mission and goals.
4. Showing concern for the success of the unit/battalion.
5. Behaving in ways that are consistent with military policies and regulations.
6. Working effectively within the framework of military policies and procedures.

Please review the following definition of **Showing Initiative**:

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.

What habits or routines do you have that help you to show initiative? That is, what routine or typical ways of behaving make it easier for you to take the initiative to accomplish things beyond what is required?

What habits or routines do you have that interfere with your ability to show initiative? That is, what routine or typical ways of behaving do you need to overcome because they make it difficult to take the initiative to accomplish things beyond what is required?

For each of the following behaviors, please rate the extent to which your habitual way of doing things helps or interferes with performing the behavior:

[Rating scale: 1 = Interferes a great deal
2 = Interferes a moderate amount
3 = Interferes a little
4 = Neither interferes nor helps
5 = Helps a little
6 = Helps a moderate amount
7 = Helps a great deal]

1. Performing extra duties without being told or asked.
2. Volunteering for assignments or additional duties.
3. Seeking clarification from leadership when necessary.
4. Anticipating the needs of the unit.
5. Seeking ways to accomplish work when there is no clear solution.
6. Initiating projects that may contribute to or enhance the success of the mission.
7. Finding additional productive work to perform when his or her own duties are completed.

Please review the following definition of **Adapting to Uncertain or Changing Situations**:

Readily and easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.

What habits or routines do you have that help you to adapt to uncertain or changing situations? That is, what routine or typical ways of behaving make it easier for you to adjust quickly to unexpected circumstances?

What habits or routines do you have that interfere with your ability to adapt to changing or uncertain situations? That is, what routine or typical ways of behaving do you need to overcome because they make it difficult to adjust quickly to unexpected circumstances?

For each of the following behaviors, please rate the extent to which your habitual way of doing things helps or interferes with performing the behavior:

[Rating scale: 1 = Interferes a great deal
2 = Interferes a moderate amount
3 = Interferes a little
4 = Neither interferes nor helps
5 = Helps a little
6 = Helps a moderate amount
7 = Helps a great deal]

1. Reacting calmly and confidently to changes in plans or unusual circumstances.
2. Responding quickly to difficult situations.
3. Maintaining a flexible approach to accomplishing work.
4. Providing quick, clear, and effective direction when faced with changing situations or unexpected events.
5. Providing clear structure to others in uncertain or ambiguous situations.
6. Working effectively when situations seem uncertain.
7. Adjusting goals and priorities in response to changing situations.
8. Accurately assessing how to best handle difficult situations and unexpected events.

Appendix J
Situational Judgment Test

ROTC Situational Judgment Test

Identification Number _____

Instructions

You will be presented with written descriptions of situations that ROTC cadets or midshipmen could encounter, followed by a list of four or five possible responses to the situation. These situations and responses were developed by cadets and midshipmen like yourself.

You will be asked to:

1. Rate the effectiveness of **each** of the responses. That is, evaluate the extent to which the response reflects an effective way to behave in that situation.
2. Decide which response is the **most** effective way to handle the situation.
3. Decide which response is the **least** effective way to handle the situation.

For each situation, carefully read the description of that situation and the list of possible responses. Then, think about the effectiveness of *each* of the responses listed. Try to think about how effective each response is compared to all possible ways to respond to that situation.

Rate the effectiveness of each response using the following rating scale:

- 1 = *Very Ineffective*
- 2 = *Ineffective*
- 3 = *Slightly Ineffective*
- 4 = *Not Particularly Effective or Ineffective*
- 5 = *Slightly Effective*
- 6 = *Effective*
- 7 = *Very Effective*

This rating scale also appears at the top of each page. Record your effectiveness rating for each response (from 1 to 7) on the line to the **left** of the response.

In addition, select which **ONE** response out of those listed is the **MOST** effective. Indicate which response you think is most effective by circling "M" in the first column to the **right** of the response. Choose **only ONE** response you feel is the **MOST** effective, even if you think that the response choices include several effective ways to handle the situation.

Please also select which **ONE** of the responses listed is the **LEAST** effective. Indicate which response you think is least effective by circling an "L" in the second column to the **right** of the response. Choose **only ONE** response you feel is the **LEAST** effective, even if you think that the response choices include several ineffective ways to handle the situation.

The following is an example of an SJT item that has been completed correctly:

Example One of the cadets/midshipmen in your squad/flight comes from a very different background than you do. You find that you do not always agree with the opinions he expresses. What would you do?

<i>Rating</i>		<i>Most Effective</i>	<i>Least Effective</i>
<u>6</u>	A. Discuss your opinions with him and try to learn from him.	M	L
<u>4</u>	B. Make an effort to get to know the person outside of ROTC activities.	M	L
<u>6</u>	C. Talk with the person about your disagreements and agree to work together even though your opinions may be very different on important issues.	M	L
<u>3</u>	D. Make sure the other person understands your point of view.	M	L
<u>2</u>	E. Do the best you can under the circumstances.	M	L

These ratings may not agree with your own opinion of the effectiveness of these responses, but this example shows you *how* we would like you to complete the items.

Note that:

- There is a single number on each line to the left of the responses, indicating the rating of effectiveness for each response.
- Each number on the rating scale can be used for more than one response.
- Even though two responses were “tied” in terms of the highest rating, only one response was circled as most effective (in the first column to the right of the responses).
- There should be only one response circled in the “Most Effective” column and one response circled in the “Least Effective” column.

You may begin the test when you are instructed to do so.

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

1. You are in charge of a squad that must carry out a mission. The mission calls for a specific knowledge base that you do not possess. As the leader, you are being evaluated on your ability to carry out the mission. What would you do?

Rating		Most Effective	Least Effective
_____	A. Find somebody with the proper knowledge base and put them in charge.	M	L
_____	B. Seek out experts on the subject to assist you. Go to them with questions, but make final decisions yourself.	M	L
_____	C. Ask knowledgeable squad members to tell you what they know.	M	L
_____	D. Do the best you can without asking for help from other squad members. You cannot appear weak in front of them.	M	L

2. You are in charge of a group of people. One of your higher-ranking subordinates has an issue with the way you are assigning some of the tasks. She sends you an e-mail in which she wonders where she fits into the picture and asks for clarification of her job. In a way, she is reprimanding you (the superior officer) for not making her role clear before. Your commander is cc'ed on the e-mail. What action would you take to deal with this situation?

Rating		Most Effective	Least Effective
_____	A. Set up a meeting between the subordinate, your commander, and yourself to discuss the situation.	M	L
_____	B. Confront the subordinate and reprimand her for cc'ing your commander on the e-mail. Threaten to transfer her to another unit.	M	L
_____	C. Speak to the commander about this and offer your plan on how to handle the situation. Then talk to the subordinate about poorly addressing a concern.	M	L
_____	D. Answer her questions and clarify her job in an e-mail also cc'ed to your commander. Ignore the chain of command issue.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

3. You have noticed a significant decline in the performance of those under you. You also note that this change occurred when a new departmental policy was implemented. How would you address this situation?

Rating		Most Effective	Least Effective
_____	A. Call the NCOs or higher ranking subordinates into your office and sternly correct their behavior.	M	L
_____	B. Talk with your subordinates to see why they are having trouble adapting to the new policy.	M	L
_____	C. Inform your subordinates that regardless of the new policy, performance will remain high or privileges will be revoked.	M	L
_____	D. Inform those who instituted the new policy that it is not working.	M	L

4. You are required to be in uniform today, but your uniform catches on a nail and is torn in such a way that it is unserviceable. What would you do?

Rating		Most Effective	Least Effective
_____	A. Wear a coat or sweater over the tear to cover it.	M	L
_____	B. Wear the uniform anyway.	M	L
_____	C. Wear civilian clothing instead. It is better not to have a uniform than to have a bad looking one.	M	L
_____	D. Wear the next most formal, but still functional uniform and get the other replaced.	M	L

5. You are the leader of a tactical training mission. While conducting the mission, you receive a change to the previous situation. This change completely nullifies your plan and you don't have much time left to complete the mission. What would you do?

Rating		Most Effective	Least Effective
_____	A. Talk to senior members of your team and quickly devise a new plan with their assistance.	M	L
_____	B. Improvise as you go. Taking time for planning at this stage will compromise the mission.	M	L
_____	C. Develop a plan to complete key aspects of the mission, even if that means some mission objectives may not be fulfilled.	M	L
_____	D. Modify your old plan to fit the new situation. You have put a lot of work into it.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

6. Your CO is a very social, extroverted person who gets to know his subordinates and often jokes around with them when appropriate. He has gotten to know you and has begun joking with you and giving you a hard time quite frequently. Sometimes his actions seem to cross the line and are slightly offensive. What would you do?

Rating		Most Effective	Least Effective
_____	A. Tolerate it for a while, but inform him of your feelings if he starts crossing too far over the line.	M	L
_____	B. Joke back with him in the same manner. Maybe he will start to understand when he is crossing the line if he is the butt of the joke sometimes.	M	L
_____	C. Tell him respectfully that you find his joking offensive at times. Make sure there is a clear line to protect both of you.	M	L
_____	D. Try to avoid situations where he is likely to want to joke around.	M	L

7. You were transferred to a new unit about three months ago and you are very busy with all of the tasks assigned to you. You are having trouble remembering the names of the people in your unit, leaving them feeling as though you really don't care about them. What would you do?

Rating		Most Effective	Least Effective
_____	A. Address the unit and let them know that you have always had difficulty learning names, but that it doesn't mean you don't care.	M	L
_____	B. Review your unit's records/interview notes to try to remember who is who.	M	L
_____	C. Make a mental association between each person's name and something about him/her. Try to use their names whenever you talk to them.	M	L
_____	D. Avoid situations where you would have to use their names.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

8. You are working under someone who you believe does not like you because of the menial jobs you are given. You feel you have higher abilities and want to show them. What would you do?

Rating		Most Effective	Least Effective
_____	A. Ask your superior why he/she has a problem with you. Tell him/her that you are going to take this up the chain of command if something doesn't change.	M	L
_____	B. Ignore the problem and accept that somebody has to do the dirty work. Your turn to do more interesting work will come eventually.	M	L
_____	C. Respectfully tell your supervisor how you feel. Request more demanding opportunities in the future.	M	L
_____	D. Ask your peers if they have had a problem with this supervisor too. If so, go to the supervisor as a group and explain how you all feel.	M	L

9. You have become very proficient at your job so you find yourself with a lot of free time. You see a lot of other work that needs to be done around the unit. However, those around you don't seem to like it when others get in the way of their work. You don't want to look like you are doing nothing half the time you are on the job. What should you do?

Rating		Most Effective	Least Effective
_____	A. Let your supervisor know you want more work assigned.	M	L
_____	B. Find ways to stay busy with your own work, even if it means going over things that are already done.	M	L
_____	C. Make an announcement saying you are free and open to helping anyone who is overburdened.	M	L
_____	D. Slow your work down so you are still getting it done exceedingly well but with less down time.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

10. You are in the middle of a close combat situation. Earlier you were in a firefight and some of your men were wounded and one was killed. You relocated your men to regroup and take cover from the enemy. An injured civilian woman is lying in the street screaming. As you peer around the corner she spots you and screams for help. You can't give away your position because you have taken many casualties. You radio your superior and tell him what's happening. He tells you to take her out. What would you do?

Rating		Most Effective	Least Effective
_____	A. Move to another location. The screaming woman will give away your position anyway.	M	L
_____	B. Do not shoot the civilian. Doing so would give away your position. Instead, maintain your position and stay quiet.	M	L
_____	C. Obey the order. It was a direct order from a superior officer.	M	L
_____	D. Do not obey the order because it is unlawful. Instead, radio for help for the civilian and find another location.	M	L

11. You are in a position demanding very little work. Many of your peers, however, are swamped with work. Someone asks you to take charge of the execution of a training session. You have nothing to gain by doing it because it is that person's job. What would you do?

Rating		Most Effective	Least Effective
_____	A. Worry about your own work. That person was selected for the training session for a reason and he/she should be the one who carries it out.	M	L
_____	B. Take charge of the planning and put all your effort into it. You feel the need to help out your colleagues, as well as get some experience in planning a training session.	M	L
_____	C. Take charge of the training but inform the other person that they owe you a favor.	M	L
_____	D. Find something else to do that is not assigned to anyone. They can handle their work.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

12. You get a call saying you have been reassigned and you have 24 hours to report. Once you do, you discover you've been assigned to a higher position, and you've been bombarded with tasks to complete. How would you handle this?

Rating		Most Effective	Least Effective
_____	A. Delegate all responsibilities to subordinates until you are familiar with the position.	M	L
_____	B. Ask those more experienced than you for help. Take their recommendations but complete all work yourself.	M	L
_____	C. Start working with your senior enlisted to prioritize and complete the tasks.	M	L
_____	D. Set priorities and take each task one by one, even if they are unfamiliar to you. Do not delegate tasks as this will make you appear weak.	M	L

13. You are in charge of planning a function in which food is involved. You assign one of your subordinates the responsibility of ordering it. On the day of the event, the food does not arrive. What would you do?

Rating		Most Effective	Least Effective
_____	A. Get on the phone immediately and order food you know will be delivered quickly.	M	L
_____	B. Cancel the event and reschedule for another time. Ensure the food is properly ordered for next time.	M	L
_____	C. Call the caterer to find out what the problem is. If food cannot be delivered immediately, order something that can be delivered quickly.	M	L
_____	D. Press on with the event. If the food does not arrive, end the event early.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

14. At your unit's barracks you are in charge of maintenance and the overall cleanliness of the building. You are about to start routine maintenance when you discover that two of your subordinates are absent and you have fewer supplies than you planned on. What would you do?

Rating		Most Effective	Least Effective
_____	A. Delegate one subordinate to search for those who are missing and one to get more supplies. Begin the maintenance with the people and supplies you have.	M	L
_____	B. Find and locate the missing subordinates. When they arrive, send them to obtain additional supplies and then begin work.	M	L
_____	C. Do what you can with the people and supplies you have. Discipline the subordinates when they return.	M	L
_____	D. Find other helpers to fill in for the missing subordinates. Have one of them obtain the necessary supplies and begin work.	M	L

15. You have been tasked with meeting a tough deadline for a current project. You do not have all the facts regarding the project and you do not have time to get the rest of the information. What course of action would you take?

Rating		Most Effective	Least Effective
_____	A. Complete the task to the best of your ability with the facts you do have, and turn in whatever you have done at the deadline.	M	L
_____	B. Request a new deadline so that you can find out what you need to know to get the task done right.	M	L
_____	C. Make your best guess about which facts are missing and proceed.	M	L
_____	D. Do the best you can with the facts you do have, but make a note to your superior that you were lacking essential facts.	M	L

1 Very Ineffective	2 Ineffective	3 Slightly Effective	4 Not Particularly Effective or Ineffective	5 Slightly Effective	6 Effective	7 Very Ineffective
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16. You need to finish a memorandum to your superior so it can be e-mailed to him in an hour, as promised. The memo is essentially complete; however, you are waiting on several pieces of information to check on some facts. You are concerned that you will not have this information by the deadline, and you know your superior will be very upset if you fail to meet the deadline. What would you do?

Rating		Most Effective	Least Effective
_____	A. Make your superior aware of the situation and ask for instructions.	M	L
_____	B. Complete the memorandum based on the information you have and include a comment about the information still outstanding and how it could alter the recommendation.	M	L
_____	C. Wait for the information before sending the recommendation.	M	L
_____	D. Explain the situation to your superior and tell him that the recommendations are being sent now and the additional information will be sent later.	M	L
_____	E. Find other ways to get the information before sending the recommendation.	M	L

17. You have been tasked with an important project. While working on the project, the situation changes dramatically so now you see it as less important than when it was first assigned. You see more important work that needs to be done that is critical to the unit. What would you do?

Rating		Most Effective	Least Effective
_____	A. Switch focus and energy to the more important work.	M	L
_____	B. Stick with your original plan and finish what you have started.	M	L
_____	C. Work on the project on the side. Get more pertinent work done first.	M	L
_____	D. Ask your superior if priorities should be shifted. Volunteer to shift priorities or delegate the previous task to someone else.	M	L

1
Very
Ineffective

2
Ineffective

3
Slightly
Effective

4
Not Particularly
Effective or
Ineffective

5
Slightly
Effective

6
Effective

7
Very
Ineffective

18. One of your peers often wants to discuss, in front of other people in the unit, his weekend party stories including sex, drinking, and drugs. You want to remain on good terms with him, but you don't want to be associated with this kind of behavior. What would you do?

Rating		Most Effective	Least Effective
_____	A. Talk with him privately and explain that his stories are unprofessional and should not be discussed in the workplace.	M	L
_____	B. Walk away from him whenever he begins one of his stories. He will get the hint after a while.	M	L
_____	C. Tell him that he is heading down a path of destruction and needs to get some help. Help him find help if he wants you to.	M	L
_____	D. Don't make a big deal out of it, but change the topic whenever he starts telling an inappropriate story.	M	L

19. You are a squad leader and you find out that today's field training event is not going to happen outside because of very cold weather. Instead, training will be done inside, but there is not nearly enough room for everybody to all train at once and gain something productive from it. In fact, by training inside, you doubt that anybody will gain something productive from the training. What would you do?

Rating		Most Effective	Least Effective
_____	A. Devise another training exercise that can be accomplished more easily in an indoor environment and proceed with that training.	M	L
_____	B. Solicit the advice of the group. Inform it that effective indoor training is unlikely, but still offer indoor training as an alternative. Follow the majority judgment about whether to train or to cancel training.	M	L
_____	C. Permit half to leave while keeping the other half to train inside. It will flip-flop next time this happens.	M	L
_____	D. Proceed with the planned training indoors. Some training is better than none.	M	L

1 Very Ineffective	2 Ineffective	3 Slightly Effective	4 Not Particularly Effective or Ineffective	5 Slightly Effective	6 Effective	7 Very Ineffective
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20. Someone in your unit often falls out on runs, appearing to give up. The rest of the unit is getting angry with him and he is feeling stress and pressure because of this. You would like to encourage this person without embarrassing him. What would you do?

Rating		Most Effective	Least Effective
_____	E. The next time he falls out during a run, fall out yourself and motivate him to get back into formation.	M	L
_____	F. Train with him on the side. Go on runs with him outside of formation runs to help him get up to par.	M	L
_____	G. Have him lead the run so it is at his pace. Encourage the rest of the unit to cheer him on.	M	L
_____	H. Fuel his competitive spirit by joking around with him about his weak performance during runs.	M	L

21. You know most of the people in your unit, but there is a new person who is unusually quiet and not very social. Everyone else really only talks to the new person when necessary. This new person is then placed in your squad. What would you do?

Rating		Most Effective	Least Effective
_____	A. Welcome him/her to your squad but do not make any other extra efforts. He/she may want privacy and would not feel comfortable if given too much attention.	M	L
_____	B. Meet with the person one-on-one to learn more about him/her. Inquire how he/she is adjusting to the unit. Ask if there is anything he/she needs from you.	M	L
_____	C. Assign someone who is sociable in the unit to take this person under his/her wing and show him/her the ropes.	M	L
_____	D. Leave the new person alone. As long as he/she is doing his/her job you shouldn't do anything. Include this person in the normal activities of the squad, but nothing more.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

22. You are given one hour to do a cleaning job which takes you and your squad 15 minutes. You cannot contact a superior or any authority, and you are at a training exercise. You know you should not allow sleep or recreation. What would you do?

Rating		Most Effective	Least Effective
_____	A. Have your squad review and train on other skills until you are in contact with a superior.	M	L
_____	B. Require your squad to utilize their time by doing physical training.	M	L
_____	C. Since no authority figure is around, you assign meaningless tasks to pass the time. It looks like you're doing something and you're not allowing any recreation.	M	L
_____	D. If no other tasks need to be completed, initiate a professional conversation that will benefit those less experienced in the squad.	M	L

23. You are leading a run and are about a mile away from your start point. You intend to push your group hard but one of your cadets is falling out of formation. You don't want to break up the formation but you also want to challenge the cadets. Your plan was to intensify the workout, not to slow it down. What would you do?

Rating		Most Effective	Least Effective
_____	A. As the cadet falls out of formation, have the group circle back to pick him/her up. This will motivate him/her to pick up the pace.	M	L
_____	B. Continue to push all cadets hard. Instruct everyone that those who cannot keep up will be doing another run later that day.	M	L
_____	C. Allow the formation to keep going, but fall out of the lead and challenge the one cadet who is struggling.	M	L
_____	D. Break your group into smaller formations so that you can intensify the workout, but at different levels.	M	L

1
Very
Ineffective

2
Ineffective

3
Slightly
Effective

4
Not Particularly
Effective or
Ineffective

5
Slightly
Effective

6
Effective

7
Very
Ineffective

24. The base commander has sent out an email looking for someone to oversee and set up the base Christmas party. There is no shortage of people who could handle this task, but most people don't want to take on extra responsibilities around that time of year. What would you do?

Rating		Most Effective	Least Effective
_____	A. Volunteer and use it as an opportunity to showcase your talent when no one else would.	M	L
_____	B. Wait until you are ordered to take on the responsibility then showcase your talent with the opportunity.	M	L
_____	C. Talk to others and try to get a group together so that no one person will have such a great duty.	M	L
_____	D. Make suggestions to the base commander for who you think would do the best job.	M	L

25. When wearing your uniform, you are approached by a group of people. They want to know how you feel about certain political situations, and then they start to criticize you for just being a member of the military. They are acting hostile and you want them to leave you alone. What would you do?

Rating		Most Effective	Least Effective
_____	A. Express your views. If you give the impression of trying to get away it will reflect poorly on you and your respective service.	M	L
_____	B. Refer them to a public affairs officer to answer their questions or concerns.	M	L
_____	C. Ignore them and walk away. You represent the military, and therefore can't speak negatively of it.	M	L
_____	D. Respond with no comment. In uniform you do not have a political view.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

26. The order you received from your leadership contains what you consider to be unnecessary steps. You know how to accomplish the same thing in half the time. Your leadership will not listen to your requests to do this mission differently. What would you do?

Rating		Most Effective	Least Effective
_____	A. Complete the mission your way. The command will be impressed and will be more open to suggestions in the future.	M	L
_____	B. Carry out the order as given. When the task is done you can suggest a better way.	M	L
_____	C. Go up the chain of command to ask your supervisor's supervisor about the short cut.	M	L
_____	D. Conduct the mission your way but don't inform the leadership.	M	L

27. You are in charge of inspecting your unit's equipment before a mission. You know there is a "proper" way to do this, but today you don't have time to deal with all of the formalities that come with the proper way, or you won't be able to accomplish the mission in time. What would you do?

Rating		Most Effective	Least Effective
_____	A. Mission accomplishment comes first. Inform the unit that the formalities will be skipped this time due to time constraints.	M	L
_____	B. Seek out additional manpower to complete the inspection properly within the time given.	M	L
_____	C. Inform your supervisor that the unit is behind schedule.	M	L
_____	D. Get as much done the "proper" way as possible within the time allotted. Leave the rest undone.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

28. At the end of a training exercise your superior asks for volunteers to assist in clean up of the training area. Everyone in your unit is tired and hungry and ready to go home. But no one leaves until the area is cleaned. What would you do?

Rating		Most Effective	Least Effective
_____	A. Hold everyone back until it is all cleaned up.	M	L
_____	B. Rally all your unit members together and motivate them to all help clean up, because the sooner everything's clean, the sooner everyone can go home.	M	L
_____	C. Assign a cleaning crew to complete the task.	M	L
_____	D. Begin cleaning and hope that others follow your lead.	M	L

29. You're sent to a new command and when you arrive, you notice almost everyone is very casual about uniform regulations. When you wear your uniform strictly according to regulations, you notice that others tend to look at you with contempt. What would you do?

Rating		Most Effective	Least Effective
_____	A. Discuss uniform regulations with your superior to find out what expectations are in this company.	M	L
_____	B. Try to befriend the others in the company to gain approval without lowering standards.	M	L
_____	C. Continue wearing the uniform properly. Over time, they will want to improve their own uniforms.	M	L
_____	D. Inform your superior of your peers who are not up to standards.	M	L

30. You are midway through an important project when your superior orders several changes. It is unclear what exactly he wants. Further, given these new changes, you are unsure whether you are expected to meet the same deadlines. What would you do?

Rating		Most Effective	Least Effective
_____	A. Seek the input of NCOs or other unit members to clear up the situation.	M	L
_____	B. Make the appropriate changes to accomplish the new objectives by the same deadline.	M	L
_____	C. Ask your superior for further clarification and guidance.	M	L
_____	D. Ask for clarification on the time frame for the deadline.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Effective

31. You give a group a set of tasks to complete. Some tasks are done well but some are left unfinished or are poorly done. You need to evaluate each individual's performance as well as the team performance. How would you determine who did good work and who did not?

Rating		Most Effective	Least Effective
_____	A. Privately ask someone to inform you which individuals were not doing their fair share of the work.	M	L
_____	B. Ask the group to do peer evaluations, and see who they think did a good or bad job.	M	L
_____	C. Rate the team as a whole and assign the group grade to every individual.	M	L
_____	D. Ask everyone to show you what they did personally.	M	L

32. You are given an order to cover something up that your chain of command did wrong. It wasn't a big mistake, but you know that it will make you look bad if it comes out. Therefore, following the order will be better for you and the group that made the mistake. What would you do?

Rating		Most Effective	Least Effective
_____	A. Refuse to follow the order on grounds that it is unlawful.	M	L
_____	B. Cover it up as long as you don't have to break any laws or alter records.	M	L
_____	C. Cover it up. Not only were you ordered to, but your superiors will think highly of you for covering for their mistakes.	M	L
_____	D. Don't cover up the incident. This would question your integrity. Owning mistakes is more important than looking good.	M	L

1 Very Ineffective	2 Ineffective	3 Slightly Effective	4 Not Particularly Effective or Ineffective	5 Slightly Effective	6 Effective	7 Very Ineffective
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33. You have several subordinates under you and they are having trouble getting along with each other. You believe the dispute is over something very insignificant, but they do not see it the way you do. Their behavior is starting to affect the whole unit. What would you do?

Rating		Most Effective	Least Effective
_____	A. Ignore it. These things pass with time and bringing attention to the issue will likely make it worse.	M	L
_____	B. Bring in everyone from the unit and have an open discussion about teamwork.	M	L
_____	C. Arrange a personal meeting with each of them to get all sides of the story. Afterwards, tell them your solution.	M	L
_____	D. Transfer one or more of the troublemakers out of the unit.	M	L

34. While conducting combat training operations, your superior tells you to kill a wounded enemy so that your unit can move on and complete the mission. This order seems contrary to normal conduct and causes you to not immediately carry it out. Your superior orders it a second time and waits for your response. What would you do?

Rating		Most Effective	Least Effective
_____	A. Consult the superior in confidence and discuss the issue of it being a lawful order.	M	L
_____	B. Do not obey the order, if you believe it to be unlawful. Do your best to exit the area without killing the injured enemy.	M	L
_____	C. Obey the given order without further question.	M	L
_____	D. Refuse. It is against the laws of war to kill the wounded or prisoners as they are now non-combatants.	M	L

1	2	3	4	5	6	7
Very Ineffective	Ineffective	Slightly Effective	Not Particularly Effective or Ineffective	Slightly Effective	Effective	Very Ineffective

35. You are assigned a task that you have little experience with, but you have created a plan to get the work done anyway. There is someone below you who has done this before and has some different ideas on how to do it. You are being evaluated on your leadership skills. What would you do?

Rating		Most Effective	Least Effective
_____	A. Stick with your own plan. You are the leader and it is your responsibility to direct the planning.	M	L
_____	B. Ask your subordinate what he/she would do differently and why. Modify your plan if the reasoning makes sense.	M	L
_____	C. Make the subordinate a joint project leader with yourself.	M	L
_____	D. Remove the subordinate from the decision-making process. You cannot afford to have your plan challenged by the subordinate.	M	L

36. You are a newly commissioned officer. At your unit you work closely with an officer of the same rank as you. You and the other officer have very different personalities, which causes a lot of conflict between the two of you. The tension in your working relationship is clearly visible to the entire unit. What would you do?

Rating		Most Effective	Least Effective
_____	A. Ignore the other officer as much as you can.	M	L
_____	B. Ask to have a moderator meet with both of you to try to get professional help with the issues between you.	M	L
_____	C. Do your best to portray a good working relationship on the outside even if you really dislike him on the inside.	M	L
_____	D. Set up a time to meet with the other officer after work. Try to get to know each other better to figure out why there is tension.	M	L

Thank you very much for completing this test.

Appendix K
Past Behavior Record

PAST BEHAVIOR RECORD

Identification Number _____

The purpose of this booklet is to capture examples of behavior related to the performance dimensions of interest in this study. More specifically, we would like you to recall and describe an example that illustrates your best behavior related to each of five performance dimensions. To help structure the information, we ask you to give three pieces of information about each example: the situation, what you did (the behavior or action), and the outcomes or consequences of the action.

To complete this booklet, please:

- Read the target dimension name and definition at the top of the page.
- Read the list of example behaviors that are relevant to the target dimension.
- Write one ROTC-related behavioral example for each target performance dimension. Pick an example that illustrates your best behavior related to the target dimension. That is, try to think of a recent example that shows you doing your best on the target dimension.
 - Describe an ROTC-related situation from your recent past that required you to exhibit your best behavior relevant to the target dimension.
 - Describe the action(s) you took in response to the situation.
 - Describe the outcome or result of your actions.
- If you can't think of a ROTC-related example, you should provide an example related to the target dimension from another setting.
- Make sure you can remember enough about the incident that you can describe it in enough detail. Please write as little as possible while including all the relevant information. Remember, we are only interested in situation-behavior-outcome, so don't include any unnecessary information. However, be sure to include enough information that the reader will know exactly what you did.
- Be as accurate as possible.

DECISION MAKING/PROBLEM SOLVING

Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions; generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.

Example Behaviors:

- Makes decisions without assistance in a timely manner.
- Finds effective solutions to problems quickly when necessary.
- Chooses an effective course of action based on available facts.

Please answer the following questions as concisely as possible.

1. Recall a situation from your recent past (preferably ROTC-related) that required you to make a difficult decision or solve a difficult problem. Describe the situation. What was the decision or problem? Describe why it was difficult and/or important to make a good decision.
2. Describe exactly what you did in response to the situation. What were the specific steps you took to decide on a course of action? What different things did you consider? What information did you gather, and how? How was your response particularly effective, innovative, or resourceful?
3. What was the outcome or result of what you did?

MAINTAINING GOOD WORKING RELATIONSHIPS

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.

Example Behaviors:

- Develops and maintains good working relationships with other military personnel.
- Treats others with respect regardless of their level, background, or characteristics.
- Makes people feel comfortable about approaching and talking with him or her.

Please answer the following questions as concisely as possible.

1. Recall a specific and challenging situation from your recent past (preferably ROTC-related) that required you to take action to develop or maintain effective working relationships with one or more other people. Describe this specific situation. What was your relation to the individual(s) (e.g., peer, superior, subordinate)? In what way was the situation difficult or challenging? How did you know that you had to do something in order to develop or maintain the relationship(s)?
2. Describe exactly what you did in order to develop or maintain the relationship(s). Be as specific as possible about what you did and said. How did you deal with any challenges in the situation, such as differences with the other person(s)?
3. What was the outcome or result of what you did?

ORGANIZATIONAL COMMITMENT

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.

Example Behaviors:

- Works effectively within the framework of military policies and procedures.
- Displays a sharp, professional appearance while in uniform.
- Shows concern for the success of the unit/battalion.
- Carries out orders.

Please answer the following questions as concisely as possible.

1. Recall a specific situation from your recent past (preferably ROTC-related) that required you to demonstrate your commitment to the organization. Describe this specific situation. What was the organization? What were the rules, procedures, orders, or objectives that you had to follow and/or support? Why was it important to do so? Was it difficult to demonstrate organizational commitment in this situation, and if so, why?
2. Describe exactly what you did in order to demonstrate organizational commitment in this situation. How did you address any difficulty and/or conflict posed by the situation?
3. What was the outcome or result of what you did?

SHOWING INITIATIVE

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.

Example Behaviors:

- Volunteers for assignments or additional duties.
- Seeks ways to accomplish work when there is no clear solution.
- Finds additional productive work to perform when his or her own duties are completed.

Please answer the following questions as concisely as possible.

1. Recall a specific situation from your recent past (preferably ROTC-related) that gave you an opportunity to show initiative. Describe the situation. What was the opportunity? How strong was the pressure from others, if any, to take on this additional work? To what extent did you have a choice about taking on this additional responsibility?
2. Describe exactly what you did to show initiative in this situation. Include in your description what your initial reaction to the situation was and what efforts you made to meet your objective(s).
3. What was the outcome or result of what you did?

ADAPTING TO CHANGING OR UNCERTAIN SITUATIONS

Easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.

Example Behaviors:

- Reacts calmly and confidently to changes in plans or unusual circumstances.
- Provides quick, clear, and effective direction when faced with changing situations or unexpected events.
- Provides clear structure to others in uncertain or ambiguous situations.

Please answer the following questions as concisely as possible.

1. Recall a specific situation from your recent past (preferably ROTC-related) that required you to adapt to a changing or uncertain situation. Describe the situation. What was the unexpected event or situation that was changing? How did the situation change or how was it uncertain?
2. Describe exactly what you did in order to adapt to this situation. How quickly did you take action? Was this your decision or did someone ask you to do this? Did you direct others, and if so, how?
3. What was the outcome or result of what you did?

Appendix L

Conventional Past Behavior Record (PBR) Evaluation Guide

PAST BEHAVIOR RECORD: EVALUATION GUIDE

VERSION: B 18-Sep-06

Prepared for:
U.S. Army Research Institute

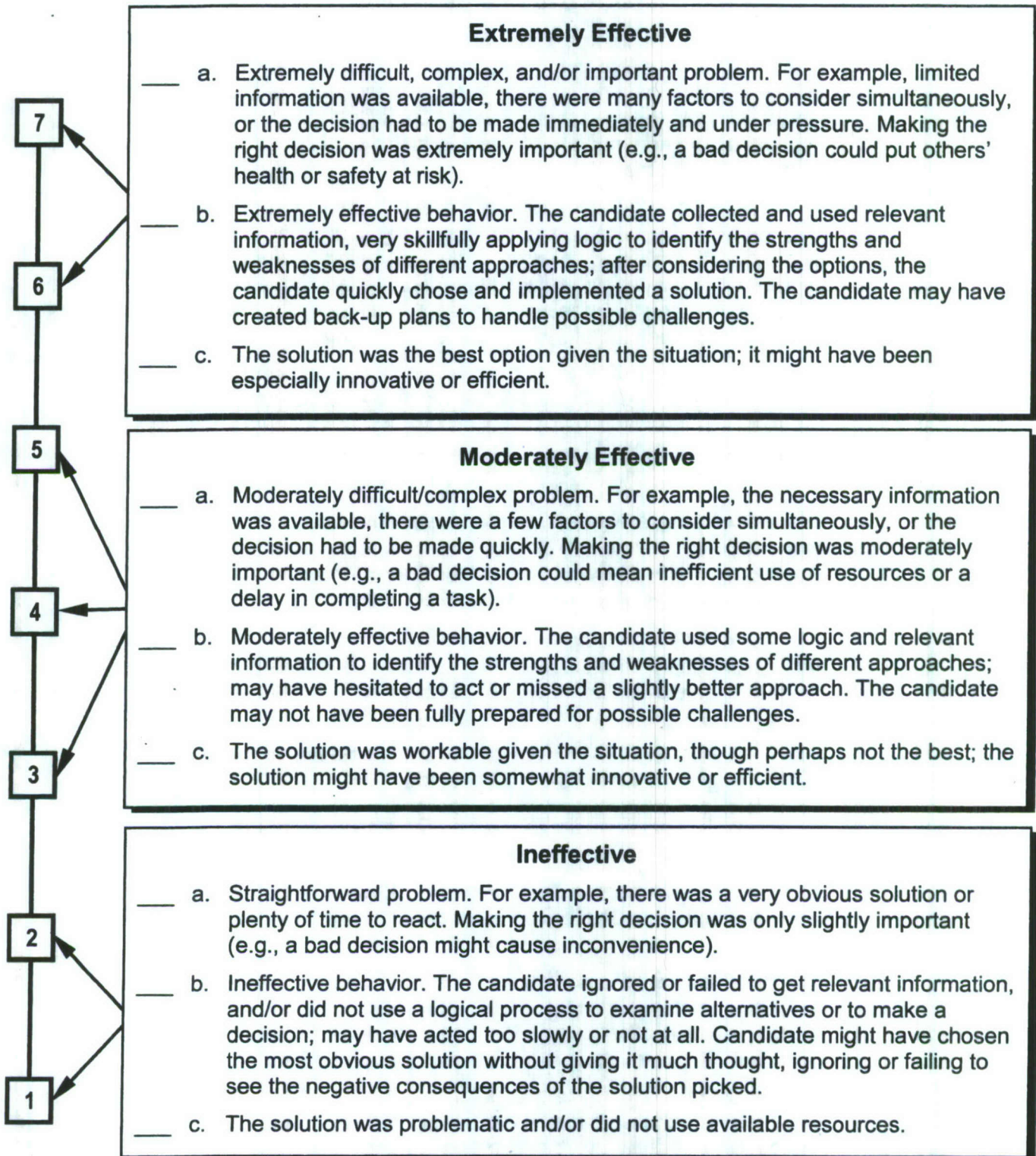
Candidate's Identification Number _____

Evaluator's Name _____

Date _____

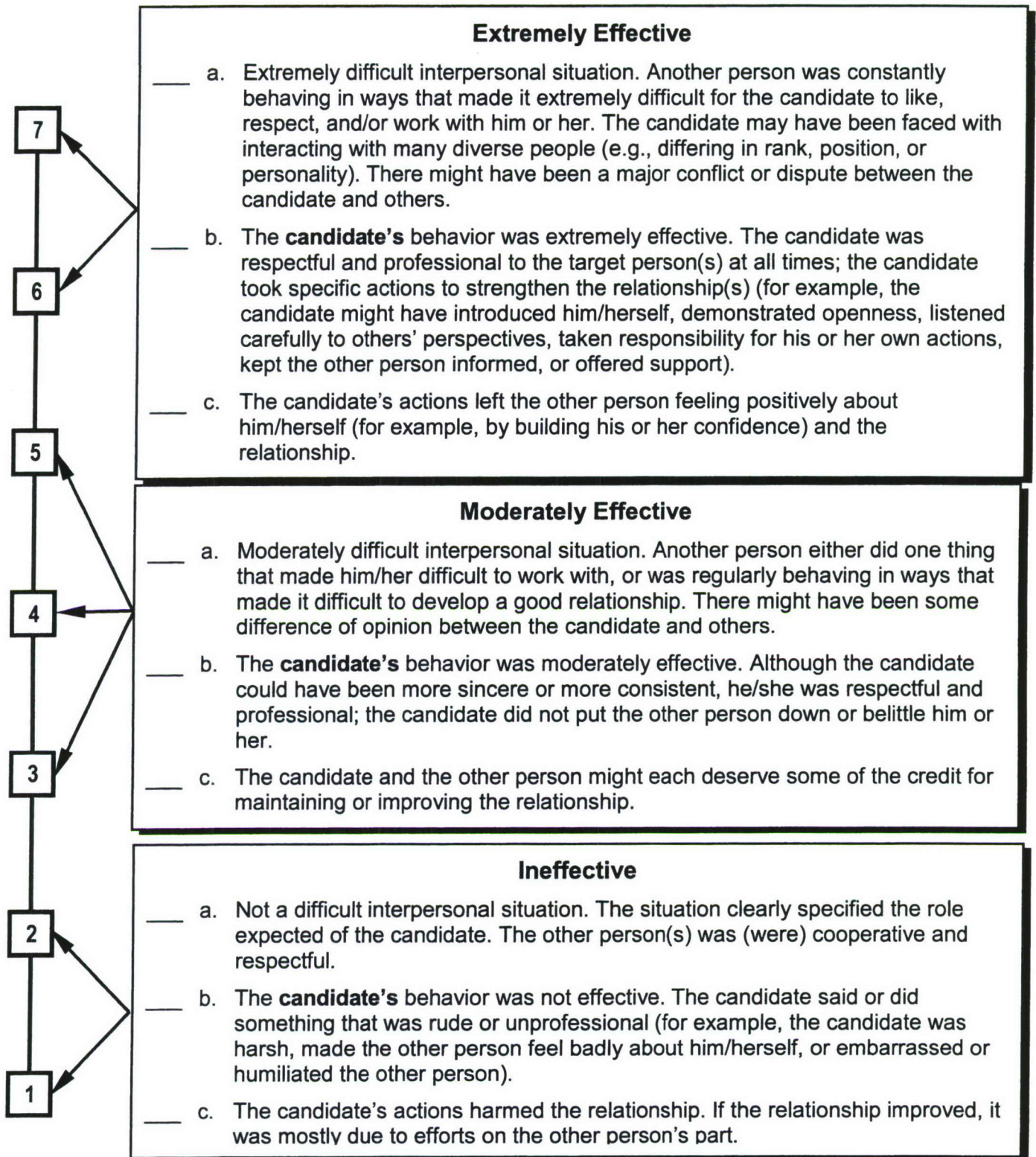
DECISION MAKING/PROBLEM SOLVING

Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions; generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.



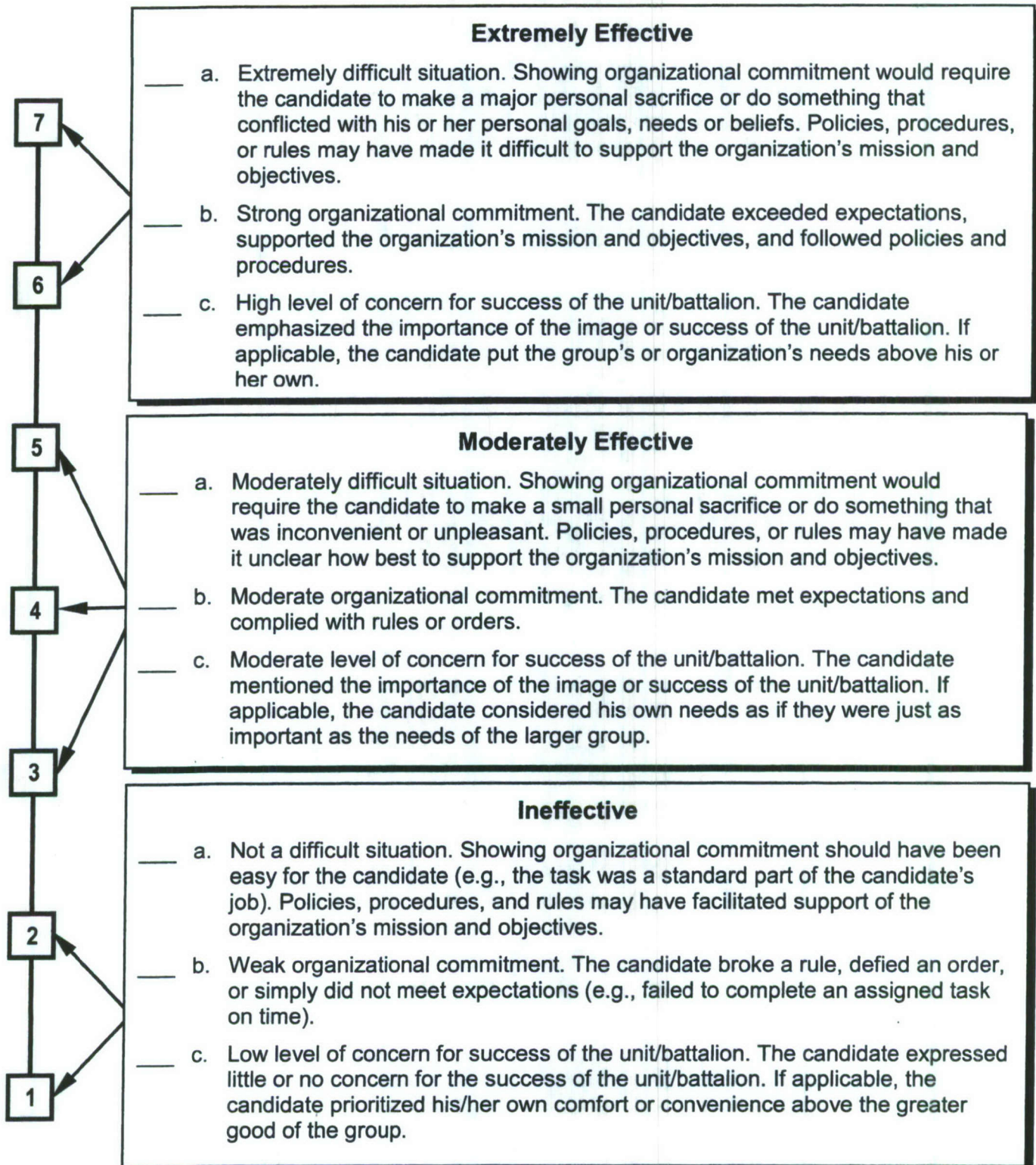
MAINTAINING GOOD WORKING RELATIONSHIPS

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.



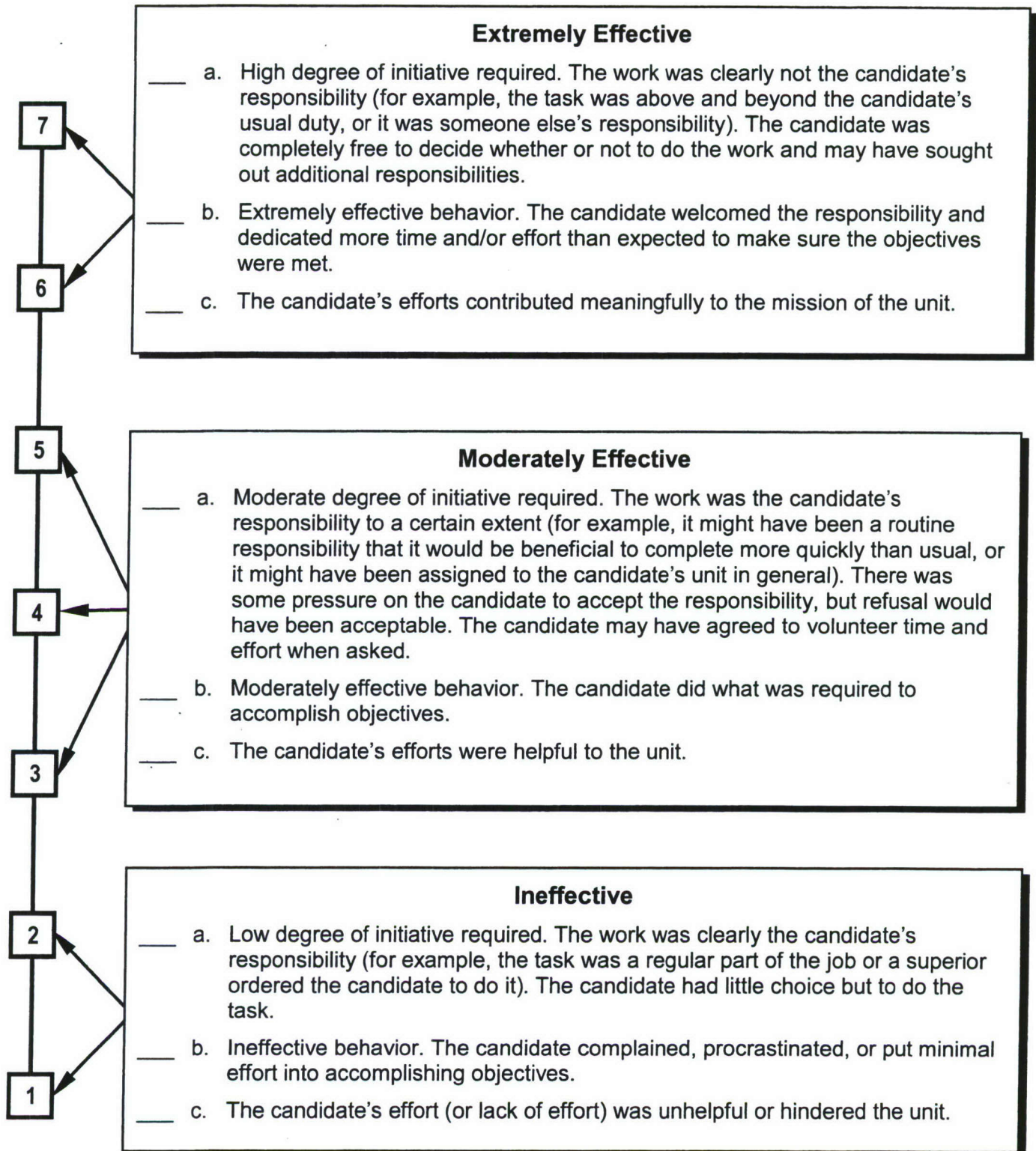
ORGANIZATIONAL COMMITMENT

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.



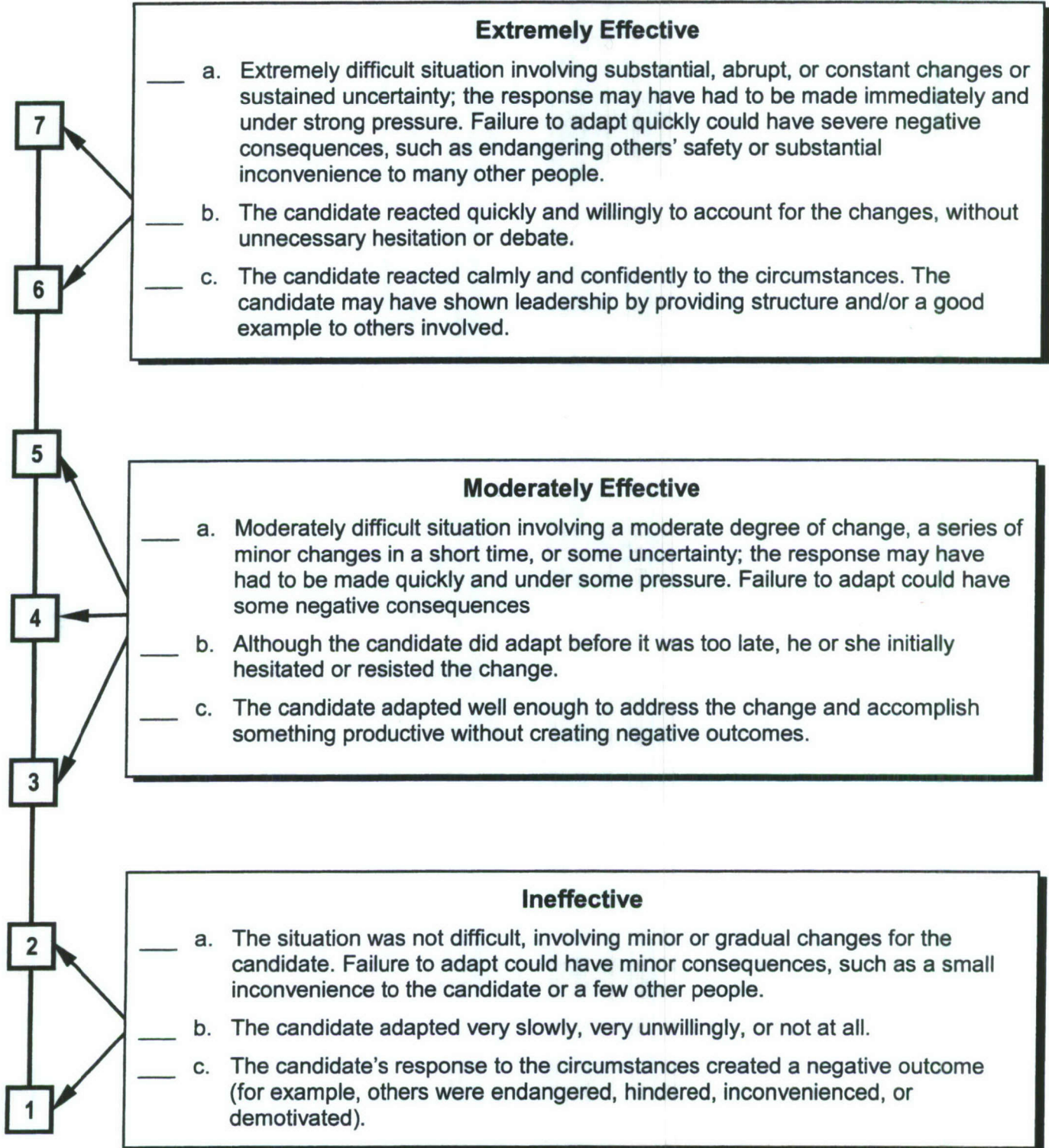
SHOWING INITIATIVE

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.



ADAPTING TO CHANGING OR UNCERTAIN SITUATIONS

Easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.



Appendix M

MARS Past behavior Record (PBR) Evaluation Guide

PAST BEHAVIOR RECORD: EVALUATION GUIDE

VERSION: M 14-Sep-06

Prepared for:
U.S. Army Research Institute

Candidate's Identification Number _____
Evaluator's Name _____
Date _____

DECISION MAKING/PROBLEM SOLVING

Making sound and timely decisions; paying attention to and taking into account all relevant information in making decisions; generating creative alternatives to solve problems; integrating seemingly unrelated information and developing effective solutions; anticipating possible problems.

Rating Instructions: Please mark one option in Part A, one in Part B, and one in Part C.

Part A. Difficulty or importance of the decision or problem:

- _____ 1. Extremely difficult and/or important. The problem was highly complex; for example, limited information was available, there were many factors to consider simultaneously, or the decision had to be made immediately and under pressure. Making the right decision was extremely important (e.g., a bad decision could put others' health or safety at risk).
- _____ 2. Moderately difficult. The problem was moderately complex; for example, the necessary information was available, there were a few factors to consider simultaneously, or the decision had to be made quickly. Making the right decision was moderately important (e.g., a bad decision could mean inefficient use of resources or a delay in completing a task).
- _____ 3. Not difficult. The problem was straightforward; for example, there was a very obvious solution or plenty of time to react. Making the right decision was only slightly important (e.g., a bad decision might cause inconvenience).

Part B. Effectiveness of the candidate's behavior:

- _____ 1. Extremely effective. The candidate collected and used relevant information, very skillfully applying logic to identify the strengths and weaknesses of different approaches; after considering the options, the candidate quickly chose and implemented a solution. The candidate may have created back-up plans to handle possible challenges.
- _____ 2. Moderately effective. The candidate used some logic and relevant information to identify the strengths and weaknesses of different approaches; may have hesitated to act or missed a slightly better approach. The candidate may not have been fully prepared for possible challenges.
- _____ 3. Not effective. The candidate ignored or failed to get relevant information, and/or did not use a logical process to examine alternatives or to make a decision; may have acted too slowly or not at all. Candidate might have chosen the most obvious solution without giving it much thought, ignoring or failing to see the negative consequences of the solution picked.

Part C. Quality of the outcome:

- _____ 1. The solution was the best option given the situation; it might have been especially innovative or efficient.
- _____ 2. The solution was workable given the situation, though perhaps not the best; the solution might have been somewhat innovative or efficient.
- _____ 3. The solution was problematic and/or did not use available resources.

MAINTAINING GOOD WORKING RELATIONSHIPS

Developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates; working well and developing effective relationships with highly diverse personalities.

Rating Instructions: Please mark one option in Part A, one in Part B, and one in Part C.

Part A. Difficulty of the interpersonal situation:

- _____ 1. Extremely difficult. Another person was constantly behaving in ways that made it extremely difficult for the candidate to like, respect, and/or work with him or her. The candidate may have been faced with interacting with many diverse people (e.g., differing in rank, position, or personality). There might have been a major conflict or dispute between the candidate and others.
- _____ 2. Moderately difficult. Another person either did one thing that made him/her difficult to work with, or was regularly behaving in ways that made it difficult to develop a good relationship. There might have been some difference of opinion between the candidate and others.
- _____ 3. Not difficult. The situation clearly specified the role expected of the candidate. The other person(s) was (were) cooperative and respectful.

Part B. Effectiveness of the candidate's behavior (be sure to focus on what the **candidate** did, not what others in the situation did):

- _____ 1. Extremely effective. The candidate was respectful and professional to the target person(s) at all times; the candidate took specific actions to strengthen the relationship(s) (for example, the candidate might have introduced him/herself, demonstrated openness, listened carefully to others' perspectives, taken responsibility for his or her own actions, kept the other person informed, or offered support).
- _____ 2. Moderately effective. Although the candidate could have been more sincere or more consistent, he/she was respectful and professional; the candidate did not put the other person down or belittle him or her.
- _____ 3. Not effective. The candidate said or did something that was rude or unprofessional (for example, the candidate was harsh, made the other person feel badly about him/herself, or embarrassed or humiliated the other person).

Part C. Impact of the candidate's behavior:

- _____ 1. The candidate's actions left the other person feeling positively about him/herself (for example, by building his or her confidence) and the relationship.
- _____ 2. The candidate and the other person might each deserve some of the credit for maintaining or improving the relationship.
- _____ 3. The candidate's actions harmed the relationship. If the relationship improved, it was mostly due to efforts on the other person's part.

ORGANIZATIONAL COMMITMENT

Working effectively within the framework of organizational policies, procedures, and rules; carrying out orders and directives; supporting the organization's mission and objectives.

Rating Instructions: Please mark one option in Part A, one in Part B, and one in Part C.

Part A. Difficulty of the situation:

- _____ 1. Extremely difficult. Showing organizational commitment would require the candidate to make a major personal sacrifice or do something that conflicted with his or her personal goals, needs or beliefs. Policies, procedures, or rules may have made it difficult to support the organization's mission and objectives.
- _____ 2. Moderately difficult. Showing organizational commitment would require the candidate to make a small personal sacrifice or do something that was inconvenient or unpleasant. Policies, procedures, or rules may have made it unclear how best to support the organization's mission and objectives.
- _____ 3. Not difficult. Showing organizational commitment should have been easy for the candidate (e.g., the task was a standard part of the candidate's job). Policies, procedures, and rules may have facilitated support of the organization's mission and objectives.

Part B. Strength of the candidate's organizational commitment:

- _____ 1. Strong. The candidate exceeded expectations, supported the organization's mission and objectives, and followed policies and procedures.
- _____ 2. Moderate. The candidate met expectations and complied with rules or orders.
- _____ 3. Weak. The candidate broke a rule, defied an order, or simply did not meet expectations (e.g., failed to complete an assigned task on time).

Part C. Level of the candidate's concern for success of the unit/battalion:

- _____ 1. High. The candidate emphasized the importance of the image or success of the unit/battalion. If applicable, the candidate put the group's or organization's needs above his or her own.
- _____ 2. Moderate. The candidate mentioned the importance of the image or success of the unit/battalion. If applicable, the candidate considered his own needs as if they were just as important as the needs of the larger group.
- _____ 3. Low. The candidate expressed little or no concern for the success of the unit/battalion. If applicable, the candidate prioritized his/her own comfort or convenience above the greater good of the group.

SHOWING INITIATIVE

Taking the initiative to do all that is necessary to accomplish objectives even if they are not normally a part of one's duties; finding additional productive work to perform when one's duties are completed.

Rating Instructions: Please mark one option in Part A, one in Part B, and one in Part C.

Part A. Degree of initiative required:

- _____ 1. High. The work was clearly not the candidate's responsibility (for example, the task was above and beyond the candidate's usual duty, or it was someone else's responsibility). The candidate was completely free to decide whether or not to do the work and may have sought out additional responsibilities.
- _____ 2. Moderate. The work was the candidate's responsibility to a certain extent (for example, it might have been a routine responsibility that it would be beneficial to complete more quickly than usual, or it might have been assigned to the candidate's unit in general). There was some pressure on the candidate to accept the responsibility, but refusal would have been acceptable. The candidate may have agreed to volunteer time and effort when asked.
- _____ 3. Low. The work was clearly the candidate's responsibility (for example, the task was a regular part of the job or a superior ordered the candidate to do it). The candidate had little choice but to do the task.

Part B. Effectiveness of the candidate's behavior:

- _____ 1. Extremely effective. The candidate welcomed the responsibility and dedicated more time and/or effort than expected to make sure the objectives were met.
- _____ 2. Moderately effective. The candidate did what was required to accomplish objectives.
- _____ 3. Not effective. The candidate complained, procrastinated, or put minimal effort into accomplishing objectives.

Part C. Impact of the candidate's behavior:

- _____ 1. The candidate's efforts contributed meaningfully to the mission of the unit.
- _____ 2. The candidate's efforts were helpful to the unit.
- _____ 3. The candidate's effort (or lack of effort) was unhelpful or hindered the unit.

ADAPTING TO CHANGING OR UNCERTAIN SITUATIONS

Easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations; imposing structure for self and others that provides as much focus as possible in dynamic situations; not needing things to be black and white; refusing to be paralyzed by uncertainty or ambiguity.

Rating Instructions: Please mark one option in Part A, one in Part B, and one in Part C.

Part A. Difficulty of the situation:

- ☐ 1. Extremely difficult. The situation involved substantial, abrupt, or constant changes or sustained uncertainty; the response may have had to be made immediately and under strong pressure. Failure to adapt quickly could have severe negative consequences, such as endangering others' safety or substantial inconvenience to many other people.
- ☐ 2. Moderately difficult. The situation involved a moderate degree of change, a series of minor changes in a short time, or some uncertainty; the response may have had to be made quickly and under some pressure. Failure to adapt could have some negative consequences
- ☐ 3. Not difficult. The situation involved minor or gradual changes for the candidate. Failure to adapt could have minor consequences, such as a small inconvenience to the candidate or a few other people.

Part B. Readiness of the candidate to adapt:

- ☐ 1. The candidate reacted quickly and willingly to account for the changes, without unnecessary hesitation or debate.
- ☐ 2. Although the candidate did adapt before it was too late, he or she initially hesitated or resisted the change.
- ☐ 3. The candidate adapted very slowly, very unwillingly, or not at all.

Part C. Effectiveness of the candidate's adaptive behavior:

- ☐ 1. Extremely effective. The candidate reacted calmly and confidently to the circumstances. The candidate may have shown leadership by providing structure and/or a good example to others involved.
- ☐ 2. Moderately effective. The candidate adapted well enough to address the change and accomplish something productive without creating negative outcomes.
- ☐ 3. Not effective. The candidate's response to the circumstances created a negative outcome (for example, others were endangered, hindered, inconvenienced, or demotivated).

Appendix N

Intercorrelations Between Predictor Variables Relevant to All Performance Dimensions

Table N

Intercorrelations Between Predictor Variables Common to All Performance Dimensions

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Wonderlic Personnel Test	1.00										
2. Big 5: Emotional Stability	.05	1.00									
3. Big 5: Extraversion	.07	.31***	1.00								
4. Big 5: Agreeableness	-.09	.51***	.36***	1.00							
5. Big 5: Conscientiousness	.00	.28***	.45***	.32***	1.00						
6. Big 5: Intellect	.25**	.35***	.31***	.19*	.36***	1.00					
7. Anxiety	-.13	-.87***	-.30***	-.29***	-.23**	-.36***	1.00				
8. Anger	.03	-.89***	-.25**	-.61***	-.26**	-.27**	.55***	1.00			
9. Friendliness	.00	.33***	.90***	.45***	.39***	.25**	-.24**	-.33***	1.00		
10. Gregariousness	.01	.29***	.86***	.33***	.31***	.20*	-.27***	-.24**	.66***	1.00	
11. Assertiveness	.20*	.16	.81***	.13	.47***	.38***	-.25**	-.04	.64***	.52***	1.00
12. Trust	-.01	.44***	.53***	.87***	.32***	.26**	-.28***	-.49***	.56***	.48***	.29***
13. Cooperation	-.15	.44***	.07	.84***	.22**	.06	-.21*	-.56***	.18*	.06	-.09
14. Self-Efficacy	.04	.26**	.51***	.20*	.78***	.40***	-.29***	-.17**	.38***	.37***	.59***
15. Dutifulness	-.01	.35***	.31***	.52***	.79***	.25**	-.21*	-.40***	.33***	.21*	.27***
16. Cautiousness	.16	.32***	.01	.28***	.31***	.25**	-.20*	-.35***	.06	-.02	-.01
17. Dependability	-.05	.20*	.26**	.19*	.82***	.18*	-.16	-.20*	.23**	.15	.31***
18. Hope/Optimism	.09	.57***	.63***	.55***	.55***	.42***	-.50***	-.49***	.63***	.48***	.50***
19. Valor/Bravery/Courage	.08	.25**	.41***	-.03	.41***	.46***	-.33***	-.12	.31***	.29***	.48***
20. Situational Flexibility	.05	.37***	.40***	.21*	.23**	.42***	-.42***	-.25**	.38***	.31***	.35***
21. Initiative	.07	.07	.39***	.05	.68***	.34***	-.10	-.02	.33***	.32***	.38***
22. Social Insight	-.03	.43***	.33***	.43***	.44***	.23**	-.34***	-.41***	.31***	.25**	.28***
23. Conflict Resolution	-.04	.54***	.35***	.46***	.31***	.38***	-.43***	-.52***	.38***	.26**	.24**

(table continues)

Table N (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
24. MTQ: Personal Mastery	-.09	.15	.23**	.08	.30***	.36***	-.16	-.11	.23**	.20*	.16
25. MTQ: Determination	-.02	.14	.20*	.14	.25**	.18*	-.15	-.10	.18*	.16	.18*
26. MTQ: Desire to Learn	-.08	.15	.12	.03	.19*	.38***	-.14	-.12	.15	.09	.06
27. MTQ: Mastery Goals	-.10	.07	.25**	.05	.28***	.25**	-.09	-.04	.23**	.24**	.16
28. MTQ: Competitive Excellence	.19*	-.21*	.20*	-.34***	.04	-.01	.10	.27***	.03	.23**	.27***
29. MTQ: Other Referenced Goals	.18*	-.29***	.09	-.27***	.08	-.01	.21*	.29***	-.02	.11	.15
30. MTQ: Competition Seeking	.15	-.09	.25**	-.31***	-.01	-.01	-.04	.18*	.07	.28***	.31***
31. MTQ: Motivation Anxiety	-.09	-.51***	-.24**	-.09	-.09	-.25**	.63***	.29***	-.19*	-.24**	-.20*
32. MTQ: Worry	-.10	-.47***	-.28***	-.12	-.13	-.26**	.59***	.26**	-.26**	-.24**	-.23**
33. MTQ: Emotionality	-.07	-.51***	-.13	-.08	-.08	-.25**	.61***	.31***	-.06	-.20*	-.07
34. MTQ: Evaluation Apprehension	-.07	-.33***	-.22**	-.04	-.02	-.15	.43***	.17*	-.18*	-.19*	-.22**
35. MTQ: Failure Avoidance	-.05	-.35***	-.38***	-.14	-.24**	-.40***	.45***	.18*	-.32***	-.26**	-.41***
36. ACS: Hesitation	.07	.27***	.14	-.06	.35***	.20*	-.38***	-.12	.12	.05	.21*
37. ACS: Preoccupation	.09	.49***	.25**	.17*	.18*	.34***	-.53***	-.35***	.19*	.21*	.27***
38. ACS: Volatility	.08	.10	.00	.07	.16	.33***	-.08	-.10	.01	-.03	.04
39. Job Satisfaction	.03	.31***	.14	.38***	.40***	.20*	-.27***	-.28***	.17*	.06	.13
40. Military Values	-.17	.07	.27***	.26**	.39***	.12	.02	-.13	.26**	.24**	.18*
41. Affective Commitment	-.03	.03	.26**	.18*	.35***	.14	-.05	-.01	.23**	.21*	.23**

(table continues)

Table N (continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
12. Trust	1.00										
13. Cooperation	.47***	1.00									
14. Self-Efficacy	.25**	.09	1.00								
15. Dutifulness	.42***	.47***	.51***	1.00							
16. Cautiousness	.16	.34***	.18*	.33***	1.00						
17. Dependability	.17*	.15	.46***	.54***	.34***	1.00					
18. Hope/Optimism	.60***	.31***	.54***	.46***	.19*	.35***	1.00				
19. Valor/Bravery/Courage	.10	-.17*	.51***	.16	.08	.24**	.40***	1.00			
20. Situational Flexibility	.25**	.10	.34***	.12	-.01	.13	.40***	.38***	1.00		
21. Initiative	.16	-.10	.53***	.29***	.04	.41***	.40***	.44***	.21*	1.00	
22. Social Insight	.38***	.36***	.40***	.36***	.29***	.37***	.41***	.20*	.28***	.24**	1.00
23. Conflict Resolution	.39***	.40***	.33***	.26**	.29***	.16	.48***	.36***	.56***	.26**	.49***
24. MTQ: Personal Mastery	.15	-.01	.31***	.05	.01	.23**	.33***	.35***	.22**	.40***	.24**
25. MTQ: Determination	.15	.08	.34***	.01	.03	.24**	.25**	.26**	.21*	.23**	.34***
26. MTQ: Desire to Learn	.10	-.06	.14	.04	.02	.15	.25**	.28***	.10	.30***	.10
27. MTQ: Mastery Goals	.10	-.02	.31***	.05	-.02	.17*	.27***	.28***	.25**	.39***	.18*
28. MTQ: Competitive Excellence	-.16	-.43***	.20*	-.19*	-.12	.00	.00	.18*	.05	.17*	.00
29. MTQ: Other Referenced Goals	-.12	-.35***	.14	-.11	-.03	.02	-.03	.08	-.05	.25**	-.07
30. MTQ: Competition Seeking	-.15	-.40***	.20*	-.21*	-.16	-.02	.03	.23**	.12	.06	.06
31. MTQ: Motivation Anxiety	-.12	-.04	-.18*	-.04	-.21*	-.07	-.32***	-.30***	-.34***	.00	-.25**
32. MTQ: Worry	-.10	-.10	-.23**	-.08	-.20*	-.09	-.33***	-.28***	-.36***	-.03	-.27**
33. MTQ: Emotionality	-.10	-.02	-.14	-.05	-.21*	-.06	-.31***	-.33***	-.28***	-.01	-.24**
34. MTQ: Evaluation Apprehension	-.10	.04	-.10	.02	-.13	-.04	-.18*	-.16	-.24**	.03	-.14
35. MTQ: Failure Avoidance	-.18*	-.05	-.30***	-.12	-.14	-.21*	-.42***	-.38***	-.42***	-.14	-.22**

(table continues)

Table N (continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
36. ACS: Hesitation	-.07	-.02	.24**	.13	.18*	.47***	.17*	.19*	.25**	.24**	.21*
37. ACS: Preoccupation	.16	.14	.19*	.16	.22**	.17*	.34***	.31***	.47***	.02	.29***
38. ACS: Volatility	.03	.10	.15	.10	.20*	.15	.06	.21*	.04	.09	.02
39. Job Satisfaction	.38***	.26**	.32***	.49***	.16	.28***	.27***	.12	.13	.12	.14
40. Military Values	.27**	.17*	.35***	.39***	.05	.24**	.19*	.23**	.17*	.23**	.09
41. Affective Commitment	.33***	-.04	.31***	.31***	.00	.19*	.24**	.29***	.13	.32***	.06

(table continues)

Table N (continued)

Variable	23	24	25	26	27	28	29	30	31	32	33
23. Conflict Resolution	1.00										
24. MTQ: Personal Mastery	.18*	1.00									
25. MTQ: Determination	.14	.66***	1.00								
26. MTQ: Desire to Learn	.13	.82***	.22**	1.00							
27. MTQ: Mastery Goals	.15	.85***	.50***	.53***	1.00						
28. MTQ: Competitive Excellence	-.22**	.14	.08	.09	.18*	1.00					
29. MTQ: Other Referenced Goals	-.25**	.04	-.07	.08	.06	.85***	1.00				
30. MTQ: Competition Seeking	-.13	.20*	.19*	.07	.24**	.87***	.48***	1.00			
31. MTQ: Motivation Anxiety	-.33***	-.17*	-.25**	-.09	-.09	.13	.35***	-.12	1.00		
32. MTQ: Worry	-.35***	-.19*	-.26***	-.11	-.10	.10	.29***	-.11	.91***	1.00	
33. MTQ: Emotionality	-.27***	-.17*	-.21*	-.11	-.11	.07	.22**	-.10	.85***	.69***	1.00
34. MTQ: Evaluation Apprehension	-.24**	-.07	-.16**	-.01	-.02	.16	.40***	-.10	.81***	.64***	.47***
35. MTQ: Failure Avoidance	-.35***	-.43***	-.39***	-.30***	-.33***	.00	.20*	-.18*	.59***	.59***	.45***
36. ACS: Hesitation	.17*	.33***	.30***	.27***	.22**	.02	-.07	.09	-.37***	-.39***	-.29***
37. ACS: Preoccupation	.41***	.12	.18*	.03	.10	-.14	-.28***	.03	-.52***	-.50***	-.49***
38. ACS: Volatility	.08	.23**	.25**	.15	.15	.00	-.06	.05	-.15	-.13	-.16
39. Job Satisfaction	.19*	.05	.08	-.01	.07	-.23**	-.20*	-.20*	-.11	-.14	-.06
40. Military Values	.16	.09	.04	.04	.14	.06	.06	.05	.20*	.19*	.14
41. Affective Commitment	.07	.06	.09	-.03	.10	.16	.14	.14	.10	.14	.02

(table continues)

Table N (continued)

Variable	34	35	36	37	38	39	40	41
34. MTQ: Evaluation Apprehension	1.00							
35. MTQ: Failure Avoidance	.49***	1.00						
36. ACS: Hesitation	-.28***	-.29***	1.00					
37. ACS: Preoccupation	-.36***	-.47***	.34***	1.00				
38. ACS: Volatility	-.10	-.17*	.24**	.13	1.00			
39. Job Satisfaction	-.08	-.17*	.05	.11	.10	1.00		
40. Military Values	.19*	.04	-.03	-.05	.06	.34***	1.00	
41. Affective Commitment	.11	.02	.01	.07	.11	.54***	.49***	1.00

Note. Pairwise deletion of missing cases. *N*s range from 137 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix O

Intercorrelations Between Dimension-Specific Predictors

Table O

Intercorrelations Between Dimension-Specific Predictors

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Experience–Decision Making	1.00										
2. Experience–Working Relations	.57***	1.00									
3. Experience–Org Commitment	.60***	.73***	1.00								
4. Experience–Showing Initiative	.50***	.57***	.61***	1.00							
5. Experience–Adapting	.63***	.64***	.58***	.75***	1.00						
6. Interest in Decision Making	.30***	.42***	.26**	.39***	.40***	1.00					
7. Interest in Working Relationships	.09	.45***	.28**	.22**	.18*	.63***	1.00				
8. Interest in Org Commitment	.14	.35***	.27**	.33***	.30***	.58***	.67***	1.00			
9. Interest in Showing Initiative	.24**	.38***	.25**	.49***	.44***	.70***	.60***	.69***	1.00		
10. Interest in Adapting	.25**	.36***	.29**	.32***	.38***	.69***	.52***	.60***	.65***	1.00	
11. MGWR–Organizational Concern	.12	.30***	.21*	.22**	.15	.17*	.25**	.33***	.26**	.21*	1.00
12. MGWR–Prosocial Values	.05	.42***	.15	.25**	.22**	.36***	.44***	.34***	.34***	.20*	.45***
13. MGWR–Impression Management	-.11	-.09	-.11	.10	-.05	-.03	.06	.13	.11	-.09	.28***
14. OC–Organizational Concern	-.04	.18*	.05	.05	-.02	.12	.24**	.32***	.25**	.22**	.78***
15. OC–Prosocial Values	.00	.31***	.16	.24**	.12	.19*	.30***	.36***	.30***	.17*	.42***
16. OC–Impression Management	-.14	-.17*	-.24**	.04	-.09	.00	.02	.04	.05	-.10	.14
17. SI–Organizational Concern	-.05	.15	.06	.16	.01	.16	.22**	.31***	.26**	.21*	.63***
18. SI–Prosocial Values	-.03	.30***	.14	.27**	.16	.23**	.31***	.29**	.28**	.16	.39***
19. SI–Impression Management	-.14	-.16	-.14	.10	-.02	.01	.01	.07	.08	-.06	.11
20. Decision Making–Expectancy	.48***	.35***	.34***	.28**	.28**	.28**	.21*	.32***	.27**	.26**	.03
21. Maintaining Relations–Expectancy	.36***	.37***	.35***	.24**	.26**	.23**	.32***	.36***	.27**	.33***	-.01
22. Org Commitment–Expectancy	.44***	.41***	.40***	.28**	.31***	.30***	.29**	.40***	.28**	.33***	.09
23. Showing Initiative–Expectancy	.49***	.38***	.38***	.38***	.39***	.30***	.26**	.38***	.34***	.29**	.02

(table continues)

Table O (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
24. Adapting-Expectancy	.50***	.36***	.36***	.32***	.37***	.28**	.23**	.36***	.27**	.37***	.01
25. Decision Making-Efficacy	.46***	.45***	.39***	.37***	.43***	.35***	.29**	.35***	.32***	.30***	.11
26. Working Relationships-Efficacy	.28**	.50***	.36***	.24**	.29**	.25**	.44***	.35***	.28**	.25**	.06
27. Org Commitment-Efficacy	.31***	.43***	.38***	.36***	.39***	.34**	.31***	.55***	.38***	.31***	.20*
28. Showing Initiative-Efficacy	.38***	.43***	.32***	.53***	.51***	.39***	.33***	.50***	.52***	.36***	.14
29. Adapting-Efficacy	.46***	.48***	.38***	.39***	.54***	.28**	.24**	.38***	.35***	.37***	.11
30. Decision Making-Commitment	.47***	.56***	.36***	.40***	.53***	.43***	.35***	.36***	.44***	.37***	.16
31. Working Relations-Commitment	.31***	.66***	.48***	.40***	.42***	.29**	.47***	.33***	.30***	.26**	.15
32. Org Commitment-Commitment	.35***	.53***	.43***	.36***	.44***	.29**	.32***	.54***	.38***	.32***	.23**
33. Showing Initiative-Commitment	.39***	.56***	.35***	.62***	.61***	.44***	.31***	.46***	.55***	.37***	.21*
34. Adapting-Commitment	.49***	.50***	.35***	.35***	.56***	.37***	.26**	.35***	.36***	.42***	.10
35. Habits-Decision Making	.23**	.27**	.15	.15	.23**	.38***	.32***	.29**	.41***	.42***	.11
36. Habits-Working Relationship	.11	.39***	.26**	.13	.15	.32***	.51***	.34***	.34***	.37***	.17*
37. Habits-Org Commitment	.05	.26**	.22*	.15	.14	.17*	.33***	.48***	.38***	.27**	.26**
38. Habits-Showing Initiative	.06	.20*	.06	.20*	.26**	.28**	.26**	.41***	.51***	.31***	.12
39. Habits-Adaptive Performance	.20*	.23**	.20*	.16	.24**	.29**	.27**	.26**	.34***	.35***	.11
40. PBR: Decision Making	.22**	.23**	.21*	.17*	.22**	-.10	-.04	-.07	-.01	-.04	-.10
41. PBR: Working Relationships	.15	.34***	.20*	.16	.13	.12	.19*	.05	.16	.06	.00
42. PBR: Org Commitment	.14	.06	.09	.05	.03	.04	-.13	-.09	-.10	.00	-.11
43. PBR: Showing Initiative	.16	.17	.11	.24**	.21*	.09	.09	.06	.12	.01	.00
44. PBR: Adapting	.20*	.23**	.22**	.09	.21*	-.01	.03	.05	.06	.07	-.01
45. SJT-Decision Making	.41***	.26**	.29**	.13	.27**	.08	-.06	.01	.01	.02	-.10
46. SJT-Working Relationships	.28**	.26**	.28**	.03	.19*	.17*	.12	.08	.06	.02	-.03

(table continues)

Table O (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
47. SJT–Org Commitment	.28**	.16	.19*	.06	.18*	.05	-.07	-.08	-.07	-.08	-.11
48. SJT–Showing Initiative	.30**	.16	.19*	.02	.13	.18*	.08	.11	.02	.05	-.10
49. SJT–Adapting	.38***	.21*	.24**	.13	.24**	.09	-.09	.03	-.01	.05	-.14
50. Self-reg: Decision Making T1	.18*	.28**	.17	.19*	.22*	.23*	.17	.22*	.25**	.34***	.06
51. Self-reg: Decision Making T2	.36***	.39***	.33**	.19	.30**	.19	.14	.09	.11	.25*	.00
52. Self-reg: Decision Making T3	.34**	.38***	.35**	.29**	.41***	.24*	.09	.20	.15	.19	.09
53. Self-reg: Decision Making T4	.14	.30**	.13	.11	.21*	.22*	.18	.16	.18	.30**	.03
54. Self-reg: Working Relations T1	.20*	.33***	.16	.12	.20*	.25**	.28**	.18	.21*	.29**	-.02
55. Self-reg: Working Relations T2	.39***	.37***	.32**	.26**	.38***	.29**	.18	.17	.27**	.33**	.02
56. Self-reg: Working Relations T3	.16	.32**	.20	.13	.28*	.19	.24*	.22*	.12	.23*	.18
57. Self-reg: Working Relations T4	.13	.31**	.12	.10	.18	.16	.24*	.24*	.18	.14	-.02
58. Self-reg: Org Commitment T1	.20*	.29**	.18*	.14	.18	.19*	.16	.17	.21*	.30**	.07
59. Self-reg: Org Commitment T2	.29**	.28**	.30**	.22*	.20*	.19	.06	.10	.18	.25*	-.07
60. Self-reg: Org Commitment T3	.30**	.36**	.27*	.27*	.38***	.22*	.11	.15	.21	.20	.06
61. Self-reg: Org Commitment T4	.32**	.39***	.29**	.26*	.31**	.21*	.18	.18	.17	.20*	.05
62. Self-reg: Showing Initiative T1	.23*	.37***	.20*	.20*	.22*	.31**	.25**	.25**	.33***	.39***	.08
63. Self-reg: Showing Initiative T2	.27**	.40***	.31**	.29**	.30**	.36***	.28**	.28**	.34***	.37***	.10
64. Self-reg: Showing Initiative T3	.24*	.32**	.27*	.17	.31**	.19	.24*	.24*	.24*	.21	.12
65. Self-reg: Showing Initiative T4	.29**	.39***	.27**	.22*	.32**	.26**	.17	.17	.17	.28**	-.01
66. Self-reg: Adapting T1	.32**	.36***	.22*	.19*	.31**	.36***	.25**	.26**	.31**	.37***	.03
67. Self-reg: Adapting T2	.31**	.30**	.18	.28**	.34**	.26**	.14	.13	.31**	.32**	-.01
68. Self-reg: Adapting T3	.39***	.43***	.31**	.29**	.42***	.31**	.30**	.19	.25*	.29**	.08
69. Self-reg: Adapting T4	.25*	.39**	.23*	.21*	.30**	.31**	.16	.18	.24*	.34**	-.07

(table continues)

Table O (continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
12. MGWR-Prosocial Values	1.00										
13. MGWR-Impression Management	.17*	1.00									
14. OC-Organizational Concern	.43***	.23**	1.00								
15. OC-Prosocial Values	.53***	.33***	.53***	1.00							
16. OC-Impression Management	.21**	.77***	.14	.18*	1.00						
17. SI-Organizational Concern	.34***	.12	.73***	.43***	.11	1.00					
18. SI-Prosocial Values	.56***	.21**	.43***	.79***	.18*	.47***	1.00				
19. SI-Impression Management	.16*	.76***	.13	.20*	.80***	.08	.19*	1.00			
20. Decision Making-Expectancy	.01	-.16	.04	-.01	-.24**	.07	-.09	-.23**	1.00		
21. Maintaining Relations-Expectancy	.11	-.11	.04	.06	-.16	.10	.02	-.12	.80***	1.00	
22. Org Commitment-Expectancy	.11	-.12	.08	.05	-.17	.14	.03	-.15	.84***	.89***	1.00
23. Showing Initiative-Expectancy	.07	-.11	.02	.03	-.14	.09	-.02	-.13	.84***	.79***	.81***
24. Adapting-Expectancy	.02	-.12	-.02	-.03	-.17*	.08	-.08	-.14	.84***	.81***	.82***
25. Decision Making-Efficacy	.18*	-.10	.13	.13	-.18*	.17*	.05	-.16	.54***	.54***	.63***
26. Working Relationships-Efficacy	.22**	-.13	.17*	.18*	-.20*	.24**	.17*	-.14	.37***	.58***	.51***
27. Org Commitment-Efficacy	.22*	.03	.23**	.21*	-.12	.27**	.12	-.02	.49***	.55***	.63***
28. Showing Initiative-Efficacy	.27**	-.01	.17	.25**	-.05	.29**	.20*	-.04	.42***	.47***	.45***
29. Adapting-Efficacy	.12	-.13	.13	.12	-.18*	.15	.01	-.16	.51***	.54***	.60***
30. Decision Making-Commitment	.33***	-.08	.17*	.19*	-.18*	.19*	.11	-.17*	.46***	.40***	.42***
31. Working Relations-Commitment	.38***	-.09	.14	.26**	-.20*	.18*	.22**	-.12	.37***	.52***	.45***
32. Org Commitment-Commitment	.22**	-.03	.20*	.27**	-.18*	.24**	.13	-.09	.39***	.44***	.48***
33. Showing Initiative-Commitment	.33***	-.03	.20*	.28**	-.07	.34***	.22**	-.04	.41***	.41***	.40***
34. Adapting-Commitment	.22*	-.17	.15	.08	-.23**	.19*	.07	-.16	.39***	.42***	.43***

(table continues)

Table O (continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
35. Habits-Decision Making	.11	-.07	.13	.02	-.15	.13	-.01	-.13	.21*	.21*	.23**
36. Habits-Working Relationship	.30***	-.06	.19*	.23**	-.11	.20*	.24**	-.12	.13	.26**	.24**
37. Habits-Org Commitment	.16	.00	.26**	.22*	-.11	.33***	.18*	-.09	.33***	.38***	.42***
38. Habits-Showing Initiative	.18*	-.05	.14	.16	-.08	.16	.18*	-.08	.10	.16	.19*
39. Habits-Adaptive Performance	.14	-.02	.16	.13	-.09	.12	.09	-.08	.21*	.27**	.28**
40. Behavior: Decision Making	-.04	-.12	-.15	-.06	-.04	-.09	-.09	-.14	.21*	.12	.13
41. Behavior: Working Relationships	.05	-.11	.02	.12	-.05	.07	.07	-.18*	.03	-.03	-.06
42. Behavior: Org Commitment	-.21**	-.11	-.13	-.08	-.06	-.03	.00	-.01	.04	-.03	.01
43. Behavior: Showing Initiative	.10	-.03	-.07	.04	-.01	.07	.02	.02	.08	.05	.08
44. Behavior: Adapting	.02	-.09	-.03	-.07	-.10	-.11	-.09	-.04	.01	.00	.05
45. SJT-Decision Making	-.11	-.30***	-.11	-.14	-.33**	-.11	-.12	-.26**	.19*	.17*	.22**
46. SJT-Working Relationships	.04	-.34***	.02	-.04	-.38***	-.01	-.03	-.32***	.22*	.21*	.24**
47. SJT-Org Commitment	-.13	-.20*	-.13	-.09	-.22**	-.05	-.11	-.19*	.15	.14	.20*
48. SJT-Showing Initiative	.02	-.29**	-.05	-.05	-.26**	-.03	-.05	-.20*	.18*	.17	.21*
49. SJT-Adapting	-.15	-.24**	-.17*	-.15	-.30***	-.18*	-.15	-.20*	.21*	.17*	.24**
50. Self-reg: Decision Making T1	.07	-.12	.00	.06	-.18	.00	-.06	-.27**	.27**	.25**	.31**
51. Self-reg: Decision Making T2	.08	-.28**	-.03	.03	-.36***	.04	-.03	-.40***	.24*	.26**	.22*
52. Self-reg: Decision Making T3	.04	-.30**	-.01	-.01	-.41***	.08	-.11	-.43***	.23*	.21	.21
53. Self-reg: Decision Making T4	.00	-.14	.06	.10	-.23*	.07	-.01	-.27**	.22*	.27**	.23*
54. Self-reg: Working Relations T1	.09	-.16	-.04	-.03	-.22*	.01	-.07	-.24*	.38***	.33***	.33***

(table continues)

Table O (continued)

Variable	12	13	14	15	16	17	18	19	20	21	22
55. Self-reg: Working Relations T2	.12	-.26**	-.01	.01	-.27**	.07	-.05	-.34**	.45***	.44***	.41***
56. Self-reg: Working Relations T3	.06	-.24*	.11	.07	-.37**	.17	-.01	-.36**	.10	.16	.10
57. Self-reg: Working Relations T4	.02	-.06	.03	.11	-.18	.07	.02	-.21*	.33**	.35***	.30**
58. Self-reg: Org Commitment T1	.03	-.25***	.05	-.03	-.27**	.08	-.06	-.37***	.38***	.31**	.33***
59. Self-reg: Org Commitment T2	-.04	-.32**	-.14	-.03	-.37***	-.04	-.10	-.42***	.30**	.28**	.26**
60. Self-reg: Org Commitment T3	.00	-.37***	-.11	-.10	-.43***	-.04	-.17	-.46***	.38***	.35**	.36**
61. Self-reg: Org Commitment T4	.03	-.04	-.01	.12	-.12	.01	.01	-.17	.28**	.31**	.34**
62. Self-reg: Showing Initiative T1	.11	-.22*	-.01	.01	-.20*	.13	-.01	-.29**	.30**	.32**	.36***
63. Self-reg: Showing Initiative T2	.10	-.26**	.06	.05	-.29**	.07	-.05	-.34***	.30**	.25*	.29**
64. Self-reg: Showing Initiative T3	.10	-.24*	.04	.04	-.39***	.13	-.01	-.35**	.19	.27*	.21
65. Self-reg: Showing Initiative T4	-.03	-.20*	-.07	.11	-.23*	.01	.06	-.32**	.28**	.33**	.31**
66. Self-reg: Adapting T1	.09	-.26**	-.03	-.03	-.29**	.08	-.05	-.37***	.34***	.26**	.33***
67. Self-reg: Adapting T2	.08	-.25*	.00	.06	-.27**	.09	-.01	-.33**	.29**	.29**	.27**
68. Self-reg: Adapting T3	.08	-.38***	-.03	-.02	-.46***	-.03	-.10	-.54***	.37**	.30**	.32**
69. Self-reg: Adapting T4	-.02	-.27**	-.05	-.03	-.29**	.06	-.07	-.37***	.28**	.34**	.34**

(table continues)

Table O (continued)

Variable	23	24	25	26	27	28	29	30	31	32	33
23. Showing Initiative–Expectancy	1.00										
24. Adapting–Expectancy	.81***	1.00									
25. Decision Making–Efficacy	.56***	.51***	1.00								
26. Working Relationships–Efficacy	.45***	.40***	.70***	1.00							
27. Org Commitment–Efficacy	.55***	.51***	.71***	.64***	1.00						
28. Showing Initiative–Efficacy	.61***	.49***	.63***	.65***	.64***	1.00					
29. Adapting–Efficacy	.52***	.56***	.80***	.68***	.66***	.64***	1.00				
30. Decision Making–Commitment	.43***	.41***	.68***	.54***	.54***	.54***	.63***	1.00			
31. Working Relations–Commit	.43***	.38***	.55***	.74***	.58***	.49***	.60***	.66***	1.00		
32. Org Commitment–Commitment	.46***	.43***	.60***	.60***	.79***	.57***	.69***	.67***	.69***	1.00	
33. Showing Initiative–Commitment	.52***	.45***	.56***	.54***	.54***	.79***	.60***	.71***	.56***	.63***	1.00
34. Adapting–Commitment	.45***	.49***	.63***	.61***	.56***	.57***	.76***	.78***	.66***	.71***	.68***
35. Habits–Decision Making	.17*	.22*	.50***	.38***	.33***	.34***	.46***	.51***	.27**	.39***	.38***
36. Habits–Working Relationship	.22*	.12	.47***	.56***	.35***	.35***	.44***	.39***	.51***	.39***	.30**
37. Habits–Org Commitment	.37***	.27**	.39***	.44***	.55***	.41***	.42***	.29**	.33***	.53***	.36***
38. Habits–Showing Initiative	.21*	.11	.36***	.33***	.41***	.42***	.41***	.30***	.24**	.43***	.40***
39. Habits–Adaptive Performance	.26**	.20*	.50***	.37***	.32***	.32***	.47***	.38***	.24**	.28**	.26**
40. Behavior: Decision Making	.25**	.17*	.07	.04	.02	.11	.14	.23**	.10	.16	.14
41. Behavior: Working Relations	.01	-.03	.11	.17	.01	.14	.15	.26**	.24**	.13	.18*
42. Behavior: Org Commitment	.00	.07	.06	.01	.04	-.05	.01	-.02	-.06	.02	-.02
43. Behavior: Showing Initiative	.12	.06	.16	.15	.20*	.20*	.19*	.14	.14	.14	.17*
44. Behavior: Adapting	.03	.03	.03	.06	.10	.05	.13	.14	.08	.17*	.08
45. SJT–Decision Making	.25**	.17*	.43***	.35***	.32***	.27**	.37***	.30***	.27**	.33***	.22**
46. SJT–Working Relationships	.23**	.18*	.39***	.39***	.32***	.28**	.32***	.29**	.25**	.31***	.20*
47. SJT–Org Commitment	.17*	.07	.34***	.23**	.23**	.14	.31***	.17	.21*	.23**	.08

(table continues)

Table O (continued)

Variable	23	24	25	26	27	28	29	30	31	32	33
48. SJT-Showing Initiative	.18*	.16	.42***	.34***	.30***	.25**	.32***	.28**	.21*	.28**	.14
49. SJT-Adapting	.28**	.20*	.39***	.27**	.29**	.25**	.35***	.25**	.20*	.28**	.20*
50. Self-reg: Decision Making T1	.30**	.26**	.29**	.06	.25**	.23*	.28**	.27**	.15	.19*	.18
51. Self-reg: Decision Making T2	.29**	.25*	.24*	.16	.16	.22*	.19	.21*	.21*	.15	.17
52. Self-reg: Decision Making T3	.28*	.25*	.25*	.17	.28*	.26*	.24*	.33**	.27*	.35**	.32**
53. Self-reg: Decision Making T4	.21*	.23*	.16	.12	.12	.15	.18	.27**	.19	.14	.18
54. Self-reg: Working Relations T1	.38***	.36***	.24**	.18	.24*	.27**	.25**	.31**	.31**	.22*	.25**
55. Self-reg: Working Relations T2	.51***	.42***	.31**	.21*	.26**	.30**	.34**	.21*	.26**	.23*	.24*
56. Self-reg: Working Relations T3	.18	.16	.12	.31**	.21	.29**	.20	.27*	.31**	.33**	.28*
57. Self-reg: Working Relations T4	.34**	.32**	.14	.24*	.26**	.22*	.19	.29**	.33**	.30**	.25*
58. Self-reg: Org Commitment T1	.35***	.29**	.25**	.11	.20*	.21*	.31**	.23*	.21*	.19*	.20*
59. Self-reg: Org Commitment T2	.33**	.32**	.20*	.05	.16	.22*	.15	.17	.12	.18	.20*
60. Self-reg: Org Commitment T3	.41***	.33**	.27*	.19	.24**	.28**	.35**	.30**	.28**	.31**	.31**
61. Self-reg: Org Commitment T4	.33**	.28**	.30**	.19	.32**	.25*	.30**	.34**	.30**	.39***	.27**
62. Self-reg: Showing Initiative T1	.35***	.34***	.29**	.22*	.21*	.34***	.36***	.30**	.28**	.27**	.34**
63. Self-reg: Showing Initiative T2	.37***	.26**	.33**	.17	.27**	.27**	.27**	.30**	.25*	.31**	.31**
64. Self-reg: Showing Initiative T3	.30**	.28**	.18	.27*	.17	.31**	.21	.29**	.25*	.27*	.32**
65. Self-reg: Showing Initiative T4	.31**	.32**	.25*	.24*	.26**	.32**	.32**	.27**	.30**	.31**	.31**
66. Self-reg: Adapting T1	.37***	.34***	.29**	.13	.22*	.31**	.27**	.35**	.19*	.22*	.32**
67. Self-reg: Adapting T2	.35***	.25*	.25*	.11	.16	.27**	.24*	.28**	.12	.16	.32**
68. Self-reg: Adapting T3	.34**	.33**	.31**	.21	.26*	.24*	.40***	.38***	.33**	.29**	.23*
69. Self-reg: Adapting T4	.33**	.31**	.30**	.22*	.31**	.28**	.32**	.34**	.26*	.32**	.30**

(table continues)

Table O (continued)

Variable	34	35	36	37	38	39	40	41	42	43	44
34. Adapting-Commitment	1.00										
35. Habits-Decision Making	.45***	1.00									
36. Habits-Working Relationship	.39***	.58***	1.00								
37. Habits-Org Commitment	.31***	.48***	.63***	1.00							
38. Habits-Showing Initiative	.33***	.59***	.61***	.74***	1.00						
39. Habits-Adaptive Performance	.37***	.68***	.73***	.59***	.68***	1.00					
40. Behavior: Decision Making	.22*	.08	-.01	.08	.07	.09	1.00				
41. Behavior: Working Relations	.13	.06	.23**	.08	.08	.10	.26**	1.00			
42. Behavior: Org Commitment	.05	.05	-.10	-.08	-.08	-.02	.06	-.04	1.00		
43. Behavior: Showing Initiative	.09	.15	.19*	.16	.19*	.24*	.13	.10	.26**	1.00	
44. Behavior: Adapting	.14	.05	-.04	-.01	-.02	.08	.19*	.13	.00	.09	1.00
45. SJT-Decision Making	.45***	.19*	.25**	.14	.14	.19*	.20*	.01	.13	.14	.09
46. SJT-Working Relationships	.40***	.30***	.27**	.29**	.23**	.26**	.18*	.11	.15	.17*	.05
47. SJT-Org Commitment	.33***	.21*	.30**	.24**	.22*	.27**	.21**	.02	.09	.12	-.07
48. SJT-Showing Initiative	.40***	.26**	.27**	.24**	.23**	.28**	.21**	.10	.17*	.21*	.01
49. SJT-Adapting	.40***	.18*	.21*	.14	.13	.18*	.19*	-.04	.14	.16*	.13
50. Self-reg: Decision Making T1	.19*	.29**	.17	.16	.23*	.31**	.20*	.09	-.11	.20*	.08
51. Self-reg: Decision Making T2	.27**	.20*	.16	.05	.02	.21*	.18	.05	-.03	.17	.21*
52. Self-reg: Decision Making T3	.40***	.19	.05	.05	-.01	.14	.25*	.03	-.09	.16	.27*
53. Self-reg: Decision Making T4	.19	.23*	.12	.00	.00	.22*	.04	-.06	-.08	.09	.10
54. Self-reg: Working Relations T1	.30**	.28**	.20*	.16	.15	.20*	.22*	.09	.08	.21*	.07
55. Self-reg: Working Relations T2	.30**	.17	.10	.11	.07	.17	.25*	.11	.00	.28**	.06
56. Self-reg: Working Relations T3	.35**	.14	.13	.07	-.04	.01	.18	-.03	-.08	.12	.23*
57. Self-reg: Working Relations T4	.26**	.16	.17	.19	.11	.15	.10	.05	-.05	.08	.06
58. Self-reg: Org Commitment T1	.26**	.18	.11	.15	.13	.22*	.28**	.05	.06	.22*	.08

(table continues)

Table O (continued)

Variable	34	35	36	37	38	39	40	41	42	43	44
59. Self-reg: Org Commitment T2	.20*	.21	.03	.05	.06	.17	.28**	.03	.07	.23*	.09
60. Self-reg: Org Commitment T3	.31**	.19	.00	-.02	-.05	.03	.25*	.05	.00	.28**	.25*
61. Self-reg: Org Commitment T4	.33**	.22*	.15	.12	.08	.19	.18	-.07	-.06	.10	.15
62. Self-reg: Showing Initiative T1	.35***	.28**	.23*	.19*	.23*	.26**	.20*	.07	.05	.23*	.10
63. Self-reg: Showing Initiative T2	.31**	.33**	.23*	.23*	.28**	.30**	.18	.07	.03	.14	.15
64. Self-reg: Showing Initiative T3	.34**	.20	.15	.02	.03	.15	.15	-.02	-.09	.06	.30**
65. Self-reg: Showing Initiative T4	.31**	.17	.11	-.02	.00	.14	.08	-.03	-.02	.13	-.04
66. Self-reg: Adapting T1	.33**	.32**	.22*	.19*	.20*	.28**	.26**	.08	.04	.10	.08
67. Self-reg: Adapting T2	.30**	.31**	.13	.17	.21*	.30**	.29**	.05	.04	.25*	.12
68. Self-reg: Adapting T3	.40***	.27*	.22*	.08	.02	.17	.28*	.15	-.07	.19	.15
69. Self-reg: Adapting T4	.38***	.26*	.16	.09	.10	.23*	.16	.09	.10	.15	.18

(table continues)

Table O (continued)

Variable	45	46	47	48	49	50	51	52	53	54	55
45. SJT-Decision Making	1.00										
46. SJT-Working Relationships	.60***	1.00									
47. SJT-Org Commitment	.66***	.57***	1.00								
48. SJT-Showing Initiative	.59***	.72***	.66***	1.00							
49. SJT-Adapting	.87***	.44***	.69***	.59***	1.00						
50. Self-reg: Decision Making T1	.17	.03	.13	.15	.20*	1.00					
51. Self-reg: Decision Making T2	.27**	.23*	.24*	.24*	.29**	.62***					
52. Self-reg: Decision Making T3	.34**	.21*	.27*	.30**	.39***	.65***	1.00				
53. Self-reg: Decision Making T4	.12	.01	.05	.01	.17	.66***	.86***				
54. Self-reg: Working Relations T1	.23*	.17	.19*	.23*	.23*	.73***	.57***	1.00			
55. Self-reg: Working Relations T2	.24*	.30**	.25*	.26**	.21*	.60***	.75***	.69***	1.00		
56. Self-reg: Working Relations T3	.35**	.26*	.19	.21	.36**	.50***	.73***	.80***	.70***	1.00	
57. Self-reg: Working Relations T4	.17	.14	.17	.17	.24*	.50***	.61***	.69***	.68***	.60***	.51***
58. Self-reg: Org Commitment T1	.19*	.14	.20*	.16	.20*	.74***	.61***	.61***	.58***	.71***	.66***
59. Self-reg: Org Commitment T2	.16	.23*	.23*	.22*	.21*	.60***	.77***	.77***	.63***	.54***	.74***
60. Self-reg: Org Commitment T3	.28*	.21*	.22*	.22*	.33**	.66***	.77***	.80***	.64***	.64***	.77***
61. Self-reg: Org Commitment T4	.21*	.11	.24*	.17	.32**	.59***	.67***	.72***	.75***	.53***	.55***
62. Self-reg: Showing Initiative T1	.24**	.09	.16	.18	.27**	.75***	.58***	.63***	.67***	.76***	.60***
63. Self-reg: Showing Initiative T2	.21*	.14	.16	.20*	.24*	.70***	.78***	.79***	.69***	.63***	.73***
64. Self-reg: Showing Initiative T3	.40***	.21	.19	.15	.40***	.54***	.69***	.76***	.76***	.52***	.50***
65. Self-reg: Showing Initiative T4	.26*	.16	.24*	.15	.28**	.58***	.67***	.65***	.75***	.57***	.59***
66. Self-reg: Adapting T1	.28**	.24**	.25**	.28**	.31**	.69***	.69***	.75***	.66***	.69***	.66***
67. Self-reg: Adapting T2	.16	.19	.25*	.24*	.23*	.64***	.75***	.78***	.65***	.51***	.75***
68. Self-reg: Adapting T3	.35**	.28**	.34**	.30**	.38**	.63***	.73***	.76***	.68***	.54***	.71***
69. Self-reg: Adapting T4	.30**	.26*	.32**	.27**	.33**	.61***	.72***	.71***	.67***	.56***	.61***

(table continues)

Table O (continued)

Variable	56	57	58	59	60	61	62	63	64	65	66
56. Self-reg: Working Relations T3	1.00										
57. Self-reg: Working Relations T4	.73 ^{***}	1.00									
58. Self-reg: Org Commitment T1	.55 ^{***}	.46 ^{***}	1.00								
59. Self-reg: Org Commitment T2	.57 ^{***}	.43 ^{***}	.61 ^{***}	1.00							
60. Self-reg: Org Commitment T3	.74 ^{***}	.61 ^{***}	.74 ^{***}	.77 ^{***}	1.00						
61. Self-reg: Org Commitment T4	.66 ^{***}	.75 ^{***}	.53 ^{***}	.56 ^{***}	.65 ^{***}	1.00					
62. Self-reg: Showing Initiative T1	.59 ^{***}	.50 ^{***}	.77 ^{***}	.61 ^{***}	.69 ^{***}	.54 ^{***}	1.00				
63. Self-reg: Showing Initiative T2	.63 ^{***}	.58 ^{***}	.63 ^{***}	.74 ^{***}	.76 ^{***}	.66 ^{***}	.70 ^{***}	1.00			
64. Self-reg: Showing Initiative T3	.82 ^{***}	.70 ^{***}	.49 ^{***}	.55 ^{***}	.69 ^{***}	.63 ^{***}	.64 ^{***}	.67 ^{***}	1.00		
65. Self-reg: Showing Initiative T4	.69 ^{***}	.68 ^{***}	.62 ^{***}	.63 ^{***}	.68 ^{***}	.78 ^{***}	.63 ^{***}	.61 ^{***}	.60 ^{***}	1.00	
66. Self-reg: Adapting T1	.61 ^{***}	.57 ^{***}	.73 ^{***}	.63 ^{***}	.70 ^{***}	.62 ^{***}	.77 ^{***}	.75 ^{***}	.67 ^{***}	.64 ^{***}	1.00
67. Self-reg: Adapting T2	.58 ^{***}	.53 ^{***}	.61 ^{***}	.74 ^{***}	.73 ^{***}	.67 ^{***}	.59 ^{***}	.78 ^{***}	.59 ^{***}	.56 ^{***}	.76 ^{***}
68. Self-reg: Adapting T3	.71 ^{***}	.60 ^{***}	.62 ^{***}	.71 ^{***}	.78 ^{***}	.72 ^{***}	.57 ^{***}	.71 ^{***}	.68 ^{***}	.66 ^{***}	.71 ^{***}
69. Self-reg: Adapting T4	.66 ^{***}	.68 ^{***}	.65 ^{***}	.58 ^{***}	.67 ^{***}	.74 ^{***}	.61 ^{***}	.69 ^{***}	.66 ^{***}	.73 ^{***}	.72 ^{***}

(table continues)

Table O (continued)

Variable	67	68	69
67. Self-reg: Adapting T2	1.00		
68. Self-reg: Adapting T3	.74***	1.00	
69. Self-reg: Adapting T4	.73***	.69***	1.00

Note. Pairwise deletion of missing cases. *N*s range from 76 to 139. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix P

Correlations Between Variables Relevant to Decision Making/Problem Solving

Table P

Correlations Between Variables Relevant to Decision Making/Problem Solving

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. DMPS Performance	1.00												
2. Experience	.22*	1.00											
3. Interests	.01	.30***	1.00										
4. Expectancy	.27**	.48***	.28**	1.00									
5. Efficacy	.12	.46***	.35***	.54***	1.00								
6. Commitment	.00	.47***	.43***	.46***	.68***	1.00							
7. Habits	-.06	.23**	.38***	.21*	.50***	.51***	1.00						
8. PBR	.27**	.22**	-.10	.21*	.07	.23**	.08	1.00					
9. SJT	.18*	.41***	.08	.19*	.43***	.30***	.20*	.20*	1.00				
10. Self-reg: T1	.13	.18*	.23*	.27**	.29**	.27**	.29**	.20*	.17	1.00			
11. Self-reg: T2	.26*	.36***	.19	.24*	.24*	.21*	.20*	.18	.27**	.62***	1.00		
12. Self-reg: T3	.32**	.34**	.24*	.23*	.25*	.33**	.19	.25*	.34**	.65***	.86***	1.00	
13. Self-reg: T4	.11	.14	.22*	.22*	.16	.27**	.23*	.04	.12	.66***	.73***	.75***	1.00
14. Wonderlic Personnel Test	.10	.31***	-.01	.05	.07	.04	-.03	.07	.25**	.01	.03	.08	-.02
15. Big 5: Emotional Stability	.19*	-.01	.13	.22*	.14	.11	.16	.23**	.15	.34***	.44***	.39***	.41***
16. Big 5: Extraversion	.13	.13	.26**	.19*	.27**	.31***	.20*	.17*	.10	.37***	.38***	.23*	.24*
17. Big 5: Agreeableness	.18*	.04	.19*	.21*	.17	.32***	.03	.10	.11	.10	.30**	.27*	.16
18. Big 5: Conscientiousness	.21*	.30***	.33***	.32***	.36***	.33***	.38***	.20*	.24**	.45***	.33**	.31**	.29**
19. Big 5: Intellect	.23**	.37***	.32***	.30***	.27**	.39***	.29**	.18*	.37***	.25**	.33**	.27*	.27**
20. Anxiety	-.15	-.03	-.11	-.19*	-.14	-.09	-.18*	-.20*	-.21*	-.45***	-.38***	-.38***	-.42***
21. Anger	-.17*	.05	-.11	-.19*	-.12	-.10	-.10	-.21*	-.06	-.17	-.40***	-.30**	-.29**
22. Friendliness	.11	.10	.23**	.16	.22*	.30***	.13	.20*	.08	.37***	.40***	.24*	.25*
23. Gregariousness	.08	.04	.20*	.12	.15	.19*	.13	.07	.02	.22*	.24*	.11	.14
24. Assertiveness	.15	.22**	.24**	.22*	.35***	.31***	.27**	.18*	.19*	.38***	.32**	.24*	.24*

(table continues)

Table P (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
25. Trust	.20*	.08	.19*	.17*	.14	.29**	.04	.11	.10	.20*	.28**	.20	.19
26. Cooperation	.10	-.03	.12	.18*	.15	.25**	.02	.06	.08	-.04	.24*	.28**	.08
27. Self-Efficacy	.26**	.29**	.35***	.35***	.32***	.27**	.37***	.22*	.21*	.48***	.35***	.33**	.34**
28. Dutifulness	.21*	.18*	.27**	.33***	.34***	.29**	.29**	.08	.23**	.26*	.25*	.24*	.11
29. Cautiousness	.13	.15	.13	.23**	.13	.24**	.11	.18*	.10	.16	.26**	.29**	.21*
30. Dependability	.07	.22*	.15	.21*	.32***	.24**	.33***	.13	.18*	.41***	.32**	.26*	.33**
31. Hope/Optimism	.26**	.18*	.22**	.26**	.16	.23**	.11	.20*	.14	.41***	.41***	.34**	.43***
32. Valor/Bravery/Courage	.05	.26**	.31***	.21*	.15	.20*	.24**	.20*	.16	.37***	.34**	.32**	.35***
33. Situational Flexibility	-.04	.13	.22**	.05	.07	.24**	.21*	.16	.16	.34**	.38***	.43***	.37***
34. Initiative	.17	.25**	.29**	.10	.11	.22**	.17	.24**	.14	.30**	.13	.17	.17
35. Conflict Resolution	.03	.07	.28**	.27**	.21*	.31***	.15	.19*	.13	.23*	.43***	.42***	.37***
36. Personal Mastery	.15	.15	.19*	.09	.02	.14	.06	.10	.05	.31**	.26**	.16	.25*
37. Determination	.13	.20*	.10	.17*	.10	.16	.04	.16*	.14	.43***	.43***	.39***	.35***
38. Desire to Learn	.10	.07	.13	.02	-.06	.05	.02	.04	-.02	.13	.07	-.03	.10
39. Mastery Goals	.12	.11	.23**	.06	.05	.16	.10	.06	.03	.27**	.20	.11	.20*
40. Competitive Excellence	.09	.07	.12	.01	-.11	-.18*	-.10	.04	-.10	.05	-.15	-.12	-.10
41. Other-Referenced Goals	.10	.10	.10	-.04	-.15	-.15	-.09	.02	-.13	-.10	-.34**	-.27*	-.27*
42. Competition Seeking	.05	.03	.11	.05	-.04	-.16	-.08	.04	-.05	.18	.08	.06	.09
43. Motivation Anxiety	-.05	-.12	.07	-.14	-.14	-.14	-.14	-.20*	-.21**	-.32***	-.44***	-.44***	-.41***
44. Worry	-.05	-.11	.03	-.19*	-.17	-.18*	-.16	-.21*	-.23**	-.32***	-.40***	-.42***	-.41***
45. Emotionality	-.05	-.13	.02	-.07	-.07	-.06	-.06	-.16*	-.17*	-.29**	-.40***	-.44***	-.35***
46. Evaluation Apprehension	-.03	-.08	.13	-.10	-.13	-.12	-.16	-.16	-.14	-.23*	-.38***	-.30**	-.32**
47. Failure Avoidance	-.13	-.20*	-.14	-.22**	-.23**	-.25**	-.21*	-.18*	-.27**	-.34***	-.45***	-.40***	-.35***
48. Social Insight	.22**	.13	.12	.31***	.30***	.28**	.11	.21*	.21*	.29**	.38***	.50**	.42***

(table continues)

Table P (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
49. ACS: Hesitation	.09	.15	.11	.14	.14	.21*	.19*	.23**	.09	.38***	.30**	.28**	.33**
50. ACS: Preoccupation	.08	.17*	.11	.18*	.17	.16	.18*	.18*	.23**	.35***	.45***	.46***	.44***
51. ACS: Volatility	.08	.28**	.07	.11	.14	.18*	.12	.13	.30***	.07	.17	.15	.06
52. Job Satisfaction	.21*	.13	.20*	.26**	.33***	.20*	.25**	.09	.32***	.23*	.16	.17	.13
53. Military Values	.10	.18*	.48**	.20*	.21*	.25**	.27**	.02	-.05	.18*	.08	.14	-.01
54. Affective Commitment	.26**	.14	.21*	.22*	.11	.04	.05	.10	.05	.23*	.12	.16	.04

Note. Pairwise deletion of missing cases. *N*s range from 83 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix Q

Correlations Between Variables Relevant to Maintaining Good Working Relationships

Table Q
Correlations Between Variables Relevant to Maintaining Good Working Relationships

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Perf: Working Relationships	1.00										
2. Experience-Working Relationships	.20*	1.00									
3. Interest-Working Relationships	.04	.45***	1.00								
4. MGWR-Organizational Concern	-.04	.30***	.25**	1.00							
5. MGWR-Prosocial Values	.13	.42***	.44***	.45***	1.00						
6. MGWR-Impression Management	-.16	-.09	.06	.28***	.17*	1.00					
7. Working Relationships-Expectancy	.23**	.37***	.32***	-.01	.11	-.11	1.00				
8. Working Relationships-Efficacy	.17*	.50***	.44***	.06	.22**	-.13	.58***	1.00			
9. Working Relations-Commitment	.09	.66***	.47***	.15	.38***	-.09	.52***	.74***	1.00		
10. Habits-Working Relationship	.04	.39***	.51***	.17*	.30***	-.06	.26**	.56***	.51***	1.00	
11. Behavior: Working Relationships	.10	.34***	.19*	.00	.05	-.11	-.03	.17	.24**	.23**	1.00
12. SJT: Working Relationships	.17*	.26**	.12	-.03	.04	-.34***	.21*	.39***	.25**	.27**	.11
13. Self-reg: Working Relationships T1	.02	.33***	.28**	-.02	.09	-.16	.33***	.18	.31**	.20*	.09
14. Self-reg: Working Relationships T2	.19	.37***	.18	.02	.12	-.26**	.44***	.21*	.26**	.10	.11
15. Self-reg: Working Relationships T3	.22*	.32**	.24*	.18	.06	-.24*	.16	.31**	.31**	.13	-.03
16. Self-reg: Working Relationships T4	.15	.31**	.24*	-.02	.02	-.06	.35***	.24*	.33**	.17	.05
17. Wonderlic Personnel Test	.01	.09	-.18*	-.25**	-.27**	-.25**	-.03	-.04	-.01	-.08	.07
18. Big 5: Emotional Stability	.19*	.14	.09	-.28**	-.02	-.32***	.30***	.14	.15	.20*	.12
19. Big 5: Extraversion	.11	.37***	.32***	-.08	.23**	-.17*	.27**	.25**	.33***	.31***	.13
20. Big 5: Agreeableness	.29**	.40***	.33***	.05	.39***	-.23**	.32***	.32***	.47***	.25**	.25**
21. Big 5: Conscientiousness	.14	.31***	.26**	.07	.22**	-.12	.34***	.33***	.32***	.41***	.08
22. Big 5: Intellect	.08	.25**	.14	-.14	-.03	-.36***	.24**	.13	.20*	.24**	.22**
23. Anxiety	-.12	-.08	.03	.29**	.13	.28**	-.22*	.00	-.02	-.14	-.04

(table continues)

Table Q (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
24. Anger	-.21*	-.17*	-.18*	.20*	-.09	.28**	-.31***	-.24**	-.24**	-.21*	-.17
25. Friendliness	.13	.42***	.36***	-.01	.35***	-.18*	.25**	.27**	.41***	.32***	.15
26. Gregariousness	.06	.27**	.26**	-.08	.21*	-.08	.25**	.18*	.23**	.24**	.10
27. Assertiveness	.10	.26**	.20*	-.13	.00	-.20*	.19*	.17	.19*	.24**	.09
28. Trust	.26**	.41***	.32***	.04	.35***	-.18*	.29**	.26**	.42***	.25**	.25**
29. Cooperation	.24**	.28*	.24**	.04	.32***	-.22**	.26**	.30***	.38***	.18*	.17*
30. Self-Efficacy	.18*	.20*	.23**	-.08	.14	-.19*	.32***	.18*	.17*	.34***	-.04
31. Dutifulness	.21*	.29**	.32***	.06	.21*	-.15	.40***	.41***	.39***	.40***	.13
32. Cautiousness	.10	.15	.10	-.08	.04	-.11	.17*	.13	.18*	.06	.07
33. Dependability	.00	.24**	.13	.11	.11	-.04	.25**	.27**	.24**	.31***	.06
34. Hope/Optimism	.26**	.40***	.24**	-.05	.28*	-.27**	.34***	.17*	.33***	.27**	.15
35. Valor/Bravery/Courage	-.03	.14	.15	.01	.02	-.12	.14	.01	.09	.21*	.00
36. Situational Flexibility	-.08	.19*	.11	-.09	-.02	-.30***	.01	-.02	.14	.21*	.00
37. Initiative	.10	.23**	.13	.05	.25**	.00	.07	.12	.18*	.20*	.08
38. Social Insight	.23**	.25**	.11	-.05	.13	-.23**	.39***	.33***	.34***	.21*	.08
39. Conflict Resolution	.02	.27**	.24**	-.04	.15	-.35***	.26**	.26**	.39***	.28**	.15
40. Personal Mastery	.05	.14	.04	.20*	.15	-.23**	.05	-.04	-.01	.06	.09
41. Determination	.09	.21*	-.01	.19*	.10	-.18*	.12	.01	.07	.04	.01
42. Desire to Learn	.02	.01	.03	.07	.08	-.21*	.02	-.05	-.08	.06	.12
43. Mastery Goals	.02	.15	.06	.24**	.17*	-.14	-.01	-.05	.02	.03	.06
44. Competitive Excellence	-.02	-.11	-.12	-.06	-.18*	.13	-.05	-.19*	-.18*	-.14	-.08
45. Other Referenced Goals	.02	-.11	-.09	-.05	-.09	.21**	-.08	-.21*	-.14	-.10	-.07
46. Competition Seeking	-.04	-.08	-.12	-.06	-.21**	.01	-.01	-.13	-.17	-.14	-.07
47. Motivation Anxiety	-.03	-.09	.10	.16	.13	.29***	-.15	-.01	-.04	.01	.01

(table continues)

Table Q (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
48. Worry	-.02	-.12	.06	.19*	.09	.29***	-.20*	-.04	-.09	.00	.04
49. Emotionality	-.04	-.07	.07	.09	.09	.20*	-.11	.03	-.01	.03	.01
50. Evaluation Apprehension	-.02	-.05	.13	.13	.15	.27**	-.08	-.02	-.01	.00	-.04
51. Failure Avoidance—Scale	-.04	-.18*	-.02	.07	.05	.38***	-.15	-.08	-.04	-.07	-.05
52. Hesitation	-.04	.06	-.03	-.05	-.09	-.12	.06	-.01	.00	.07	.05
53. Preoccupation	.01	.19*	.05	-.11	-.06	-.29**	.17	.05	.13	.09	.02
54. Volatility	.04	.14	.00	-.02	.01	-.17*	.01	.06	.07	.10	.04
55. Job Satisfaction	.26**	.18*	.19*	.04	.08	-.11	.27**	.27**	.16	.29**	-.01
56. Military Values	.10	.38***	.53***	.35***	.24**	.16	.23**	.31***	.31***	.39***	.19*
57. Affective Commitment	.25**	.19*	.24**	.19*	.14	.07	.19*	.07	.13	.17	-.01

(table continues)

Table Q (continued)

Variable	12	13	14	15	16
12. SJT: Working Relationships	1.00				
13. Self-reg: Working Relationships T1	.17	1.00			
14. Self-reg: Working Relationships T2	.30**	.65***	1.00		
15. Self-reg: Working Relationships T3	.26*	.54***	.55***	1.00	
16. Self-reg: Working Relationships T4	.14	.60***	.51***	.73***	1.00
17. Wonderlic Personnel Test	.18*	-.02	-.02	.07	-.04
18. Big 5: Emotional Stability	.29**	.41***	.51***	.31**	.41***
19. Big 5: Extraversion	.17	.56***	.40***	.27*	.30**
20. Big 5: Agreeableness	.35***	.24*	.34***	.35**	.29**
21. Big 5: Conscientiousness	.22**	.43***	.43***	.34**	.29**
22. Big 5: Intellect	.26**	.32**	.41***	.24*	.20*
23. Anxiety	-.25**	-.45***	-.43***	-.25*	-.37***
24. Anger	-.26**	-.27**	-.47***	-.29**	-.35***
25. Friendliness	.15	.53***	.42***	.34**	.38***
26. Gregariousness	.16	.44***	.28**	.08	.17
27. Assertiveness	.12	.47***	.31**	.28**	.24*
28. Trust	.25**	.34***	.34**	.28*	.29**
29. Cooperation	.36***	.06	.26**	.34**	.21*
30. Self-Efficacy	.19*	.49***	.47***	.27*	.26**
31. Dutifulness	.32***	.32***	.30**	.32**	.29**
32. Cautiousness	.20*	.09	.20*	.29**	.17
33. Dependability	.08	.30**	.32**	.33**	.21*
34. Hope/Optimism	.18*	.51***	.47***	.35**	.40***

(table continues)

Table Q (continued)

Variable	12	13	14	15	16
35. Valor/Bravery/Courage	.08	.40***	.37***	.31**	.27**
36. Situational Flexibility	.14	.39***	.37***	.33**	.26**
37. Initiative	.12	.30**	.34**	.13	.18
38. Social Insight	.24*	.41***	.49***	.46***	.45***
39. Conflict Resolution	.35***	.32***	.49***	.38***	.38***
40. Personal Mastery	.05	.28**	.39***	.10	.08
41. Determination	.07	.36***	.46***	.31**	.23*
42. Desire to Learn	.01	.15	.18	-.04	-.02
43. Mastery Goals	.05	.21*	.36***	.05	.04
44. Competitive Excellence	-.18*	-.02	-.13	-.22*	-.22*
45. Other Referenced Goals	-.22**	-.16	-.30**	-.31**	-.29**
46. Competition Seeking	-.10	.11	.06	-.06	-.08
47. Motivation Anxiety	-.22**	-.39***	-.40***	-.30**	-.31**
48. Worry	-.22**	-.40***	-.35***	-.28**	-.35***
49. Emotionality	-.15	-.35***	-.42***	-.32**	-.25***
50. Evaluation Apprehension	-.19*	-.27**	-.28**	-.20	-.21*
51. Failure Avoidance- scale	-.31***	-.41***	-.41***	-.37***	-.30**
52. Hesitation	.01	.26**	.26**	.16	.19
53. Preoccupation	.26**	.44***	.50***	.40***	.38***
54. Volatility	.20*	.06	.15	.14	.00
55. Job Satisfaction	.33***	.22*	.20	.13	.17
56. Military Values	.12	.20*	.15	.20	.06
57. Affective Commitment	.02	.16	.24*	.07	.12

Note. Pairwise deletion of missing cases. *Ns* range from 77 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix R

Correlations Between Variables Relevant to Organizational Commitment

Table R

Correlations Between Variables Relevant to Organizational Commitment

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Perf: Organizational Commitment	1.00										
2. Experience–Organizational Commitment	.30***	1.00									
3. Interest–Organizational Commitment	.07	.27**	1.00								
4. OC–Organizational Concern	-.13	.05	.32***	1.00							
5. OC–Prosocial Values	-.06	.16	.36***	.53***	1.00						
6. OC–Impression Management	-.14	-.24**	.04	.14	.18*	1.00					
7. Org Commitment–Expectancy	.16	.40***	.40***	.08	.05	-.17	1.00				
8. Org Commitment–Efficacy	.11	.38***	.55***	.23**	.21*	-.12	.63***	1.00			
9. Org Commitment–Commitment	.12	.43***	.54***	.20*	.27**	-.18*	.48***	.79***	1.00		
10. Habits–Org Commitment	.12	.22*	.48***	.26**	.22*	-.11	.42***	.55***	.53***	1.00	
11. Behavior: Org Commitment	-.06	.09	-.09	-.13	-.08	-.06	.01	.04	.02	-.08	1.00
12. SJT: Org Commitment	.08	.19*	-.08	-.13	-.09	-.22**	.20*	.23**	.23*	.24*	.09
13. Self-reg: Org Commitment T1	.14	.18*	.17	.05	-.03	-.27**	.33***	.20*	.19*	.15	.06
14. Self-reg: Org Commitment T2	.13	.30**	.10	-.14	-.03	-.37***	.26**	.16	.18	.05	.07
15. Self-reg: Org Commitment T3	.30**	.27*	.15	-.11	-.10	-.43***	.36**	.24*	.31**	-.02	.00
16. Self-reg: Org Commitment T4	.08	.29**	.18	-.01	.12	-.12	.34**	.32**	.39***	.12	-.06
17. Wonderlic Personnel Test	.06	.11	-.23**	-.35***	-.22**	-.20*	.00	-.12	-.05	-.18*	.11
18. Big 5: Emotional Stability	.13	.06	-.02	-.23**	-.08	-.25**	.22**	.06	.04	.18*	-.02
19. Big 5: Extraversion	.12	.24**	.22**	-.02	.09	-.13	.24**	.18*	.21*	.21*	.05
20. Big 5: Agreeableness	.16	.28**	.14	.10	.20*	-.24**	.22*	.23**	.29**	.25**	.04
21. Big 5: Conscientiousness	.22**	.30***	.32***	.04	.11	-.12	.35***	.36***	.43***	.39***	-.02
22. Big 5: Intellect	.13	.18*	.13	-.15	-.14	-.25**	.19*	.08	.19*	.07	.03
23. Anxiety	-.12	-.05	.06	.26**	.12	.25**	-.18*	-.01	.01	-.14	-.01

(table continues)

Table R (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
24. Anger	-.11	-.06	-.02	.16	.01	.19*	-.21*	-.10	-.08	-.17*	.03
25. Friendliness	.09	.23**	.25**	.04	.20*	-.11	.21*	.19*	.25**	.24**	.05
26. Gregariousness	.03	.20*	.15	.02	.06	-.08	.16	.09	.09	.16	-.03
27. Assertiveness	.21*	.20*	.18*	-.15	-.06	-.16	.24**	.18*	.22*	.13	.12
28. Trust	.19*	.27**	.16	.07	.23**	-.17*	.20*	.18*	.26**	.29**	.06
29. Cooperation	.08	.21*	.07	.11	.11	-.24**	.18*	.22*	.24**	.13	.01
30. Self-Efficacy	.25**	.26**	.30***	-.06	.08	-.11	.36***	.23**	.27**	.24**	.03
31. Dutifulness	.24**	.32***	.30***	.03	.08	-.20*	.41***	.41***	.46***	.46***	-.01
32. Cautiousness	.11	.15	.08	-.05	.02	-.17*	.10	.16	.20*	.06	.12
33. Dependability	.08	.17*	.16	.13	.05	-.07	.24**	.28*	.31***	.29**	-.07
34. Hope/Optimism	.23**	.27**	.19*	-.05	.17*	-.26**	.28**	.12	.25**	.22*	.03
35. Valor/Bravery/Courage	.03	.10	.26**	-.02	.06	-.14	.15	.08	.14	.09	-.01
36. Situational Flexibility	-.07	.11	.09	-.04	-.09	-.20*	.02	.01	.11	.08	-.03
37. Initiative	.15	.20*	.24**	-.01	.16	.01	.09	.12	.23**	.17	-.01
38. Social Insight	.13	.20*	.12	.03	-.04	-.21*	.35***	.32***	.28**	.16	.14
39. Conflict Resolution	-.04	.16	.19*	.00	.09	-.34***	.20*	.19*	.23**	.16	.05
40. Personal Mastery	.04	.04	.12	.23**	.16*	-.14	.07	-.03	.01	-.02	.02
41. Determination	.01	.08	.03	.20*	.16	-.14	.16	.08	.05	-.01	-.08
42. Desire to Learn	.03	.00	.09	.11	.08	-.11	-.02	-.13	-.06	-.03	.11
43. Mastery Goals	.04	.04	.14	.25**	.16*	-.08	.06	.03	.07	-.01	-.02
44. Competitive Excellence	.11	-.01	-.03	-.09	-.11	.16	.01	-.15	-.17*	-.12	-.04
45. Other Referenced Goals	.15	.03	-.02	-.10	-.08	.23**	-.04	-.15	-.13	-.12	-.02
46. Competition Seeking	.04	-.04	-.03	-.06	-.10	.05	.05	-.11	-.17	-.09	-.04
47. Motivation Anxiety	.01	-.04	.11	.13	.05	.27**	-.10	.02	-.04	-.04	-.11

(table continues)

Table R (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
48. Worry	.02	-.04	.06	.14	.04	.24**	-.18*	-.02	-.09	-.05	-.12
49. Emotionality	-.02	-.05	.09	.09	.05	.20*	-.07	.05	.02	.01	-.01
50. Evaluation Apprehension	.03	-.02	.13	.10	.02	.26**	-.02	.02	-.03	-.07	-.16*
51. Failure Avoidance-Scale	-.07	-.11	-.09	-.03	-.03	.35***	-.14	-.05	-.13	-.13	-.04
52. Hesitation	-.01	.00	.04	-.02	-.11	-.12	.09	.02	.04	.04	.07
53. Preoccupation	.07	.16	-.05	-.10	-.16	-.27**	.20*	.10	.09	.05	-.06
54. Volatility	.05	.12	.04	-.07	-.04	-.20*	.08	.10	.16	.04	.06
55. Job Satisfaction	.28**	.20*	.23**	.04	.09	-.11	.27**	.27**	.27**	.46***	.06
56. Military Values	.05	.31***	.65***	.32***	.27**	.13	.26**	.37***	.40***	.48***	-.10
57. Affective Commitment	.35***	.25**	.40***	.07	.07	.06	.28**	.27**	.23**	.40***	-.09

(table continues)

Table R (continued)

Variable	12	13	14	15	16
12. SJT: Org Commitment	1.00				
13. Self-reg: Org Commitment T1	.20*	1.00			
14. Self-reg: Org Commitment T2	.23*	.61***	1.00		
15. Self-reg: Org Commitment T3	.22*	.74***	.77***	1.00	
16. Self-reg: Org Commitment T4	.24*	.53***	.56***	.65***	1.00
17. Wonderlic Personnel Test	.19*	.04	.07	.12	.00
18. Big 5: Emotional Stability	.23**	.32***	.48***	.40***	.35***
19. Big 5: Extraversion	.21*	.44***	.41***	.39***	.31**
20. Big 5: Agreeableness	.10	.21*	.20*	.34**	.11
21. Big 5: Conscientiousness	.24**	.44***	.34***	.35**	.33**
22. Big 5: Intellect	.29***	.31**	.32**	.36**	.26**
23. Anxiety	-.26**	-.36***	-.40***	-.38***	-.37***
24. Anger	-.14	-.21*	-.44***	-.31**	-.24*
25. Friendliness	.19*	.44***	.45***	.39***	.37***
26. Gregariousness	.13	.28**	.25*	.20	.13
27. Assertiveness	.24**	.42***	.34**	.44***	.32**
28. Trust	.11	.31**	.24*	.31**	.15
29. Cooperation	.06	.03	.11	.29**	.03
30. Self-Efficacy	.20*	.44***	.37***	.40***	.32**
31. Dutifulness	.21*	.25**	.20*	.27*	.24*
32. Cautiousness	.05	.14	.27**	.25*	.17
33. Dependability	.20*	.41***	.31**	.29**	.31**
34. Hope/Optimism	.21*	.45***	.45***	.45***	.39***

(table continues)

Table R (continued)

Variable	12	13	14	15	16
35. Valor/Bravery/Courage	.17*	.34***	.40***	.34***	.39***
36. Situational Flexibility	.22**	.36***	.33**	.37***	.35***
37. Initiative	.13	.31**	.23*	.18	.18
38. Social Insight	.20*	.41***	.35***	.50***	.41***
39. Conflict Resolution	.24**	.32**	.37***	.41***	.36***
40. Personal Mastery	.03	.34***	.33**	.24*	.11
41. Determination	.11	.43***	.43***	.38***	.24*
42. Desire to Learn	-.04	.20*	.13	.01	-.01
43. Mastery Goals	.04	.26**	.28**	.26*	.08
44. Competitive Excellence	-.02	-.02	-.09	-.03	-.14
45. Other Referenced Goals	-.05	-.16	-.25*	-.18	-.25*
46. Competition Seeking	.00	.11	.09	.12	.00
47. Motivation Anxiety	-.21**	-.33***	-.47***	-.40***	-.41***
48. Worry	-.22**	-.34***	-.46***	-.41***	-.42***
49. Emotionality	-.20*	-.24**	-.40***	-.37**	-.36***
50. Evaluation Apprehension	-.12	-.30**	-.39***	-.28**	-.29**
51. Failure Avoidance-Scale	-.27**	-.45***	-.41***	-.40***	-.36***
52. Hesitation	.14	.33***	.36***	.27*	.26**
53. Preoccupation	.24**	.33***	.39***	.48***	.46***
54. Volatility	.25**	.06	.16	.14	.12
55. Job Satisfaction	.24**	.26**	.19	.15	.14
56. Military Values	-.02	.14	.06	.10	.04
57. Affective Commitment	.04	.22*	.13	.14	.15

Note. Pairwise deletion of missing cases. *N*s range from 78 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix S

Correlations Between Variables Relevant to Showing Initiative

Table S

Correlations Between Variables Relevant to Showing Initiative

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Perf: Showing Initiative	1.00										
2. Experience-Showing Initiative	.21*	1.00									
3. Interest-Showing Initiative	.12	.49**	1.00								
4. SI-Organizational Concern	.04	.16	.26**	1.00							
5. SI-Prosocial Values	.02	.27**	.28**	.47***	1.00						
6. SI-Impression Management	-.02	.10	.08	.08	.19*	1.00					
7. Showing Initiative-Expectancy	.11	.38***	.34***	.09	-.02	-.13	1.00				
8. Showing Initiative-Efficacy	.08	.53***	.52***	.29**	.20*	-.04	.61***	1.00			
9. Showing Initiative-Commitment	.06	.62***	.55***	.34***	.22**	-.04	.52***	.79***	1.00		
10. Habits-Showing Initiative	-.03	.20*	.51***	.16	.18*	-.08	.21*	.42***	.40***	1.00	
11. Behavior: Showing Initiative	.18*	.24**	.12	.07	.02	.02	.12	.20*	.17*	.19*	1.00
12. SJT: Showing Initiative	.03	.02	.02	-.03	-.05	-.20*	.18*	.25**	.14	.23**	.21*
13. Self-reg: Showing Initiative T1	.15	.20*	.33***	.13	-.01	-.29**	.35***	.34***	.34***	.23*	.23*
14. Self-reg: Showing Initiative T2	.20	.29**	.34***	.07	-.05	-.34**	.37***	.27**	.31**	.28**	.14
15. Self-reg: Showing Initiative T3	.26*	.17	.24**	.13	-.01	-.35**	.30**	.31**	.32**	.03	.06
16. Self-reg: Showing Initiative T4	.10	.22*	.17	.01	.06	-.32**	.31**	.32**	.31**	.00	.13
17. Wonderlic Personnel Test	-.03	.06	-.12	-.21**	-.15	-.21*	.04	-.02	.03	-.16	.09
18. Big 5: Emotional Stability	.06	-.03	.03	-.16	-.10	-.30***	.24**	.08	.09	.19*	.14
19. Big 5: Extraversion	.19*	.22*	.25**	.09	.08	-.17*	.26**	.31***	.29**	.23**	.30***
20. Big 5: Agreeableness	.16	.10	.17	.14	.17*	-.23**	.19*	.13	.24**	.10	.13
21. Big 5: Conscientiousness	.11	.28**	.35***	.14	.15	-.13	.40***	.38***	.37***	.42***	.23**
22. Big 5: Intellect	.20*	.15	.24**	-.13	-.16	-.35***	.35***	.25**	.31***	.18*	.17*
23. Anxiety	-.01	.01	-.05	.21*	.20*	.28**	-.22**	-.03	-.04	-.19*	-.11

(table continues)

Table S (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
24. Anger	-.09	.04	.00	.08	.00	.26**	-.20*	-.11	-.11	-.14	-.13
25. Friendliness	.19*	.21*	.27**	.14	.19*	-.13	.20*	.30***	.28**	.24**	.32***
26. Gregariousness	.09	.14	.16	.07	.09	-.10	.20*	.21*	.20*	.18*	.16
27. Assertiveness	.21*	.22*	.21*	.00	-.12	-.23**	.28**	.29**	.26**	.16	.29**
28. Trust	.20*	.16	.24**	.10	.19*	-.19*	.17*	.15	.24**	.18*	.17*
29. Cooperation	.07	.00	.03	.14	.10	-.20*	.15	.08	.17*	-.01	.05
30. Self-Efficacy	.17	.21*	.30***	.04	.05	-.15	.45***	.35***	.26**	.28**	.28**
31. Dutifulness	.09	.15	.27**	.11	.14	-.14	.35***	.31***	.29**	.35***	.05
32. Cautiousness	.12	.18*	.12	.02	.05	-.15	.25**	.22*	.23**	.03	.06
33. Dependability	.03	.20*	.20*	.20*	.07	-.10	.26**	.24**	.26**	.32***	.13
34. Hope/Optimism	.21*	.13	.17*	.05	.12	-.30***	.29**	.18*	.23**	.18*	.20*
35. Valor/Bravery/Courage	-.02	.14	.26**	-.04	-.04	-.21*	.27**	.24**	.21*	.18*	.15
36. Situational Flexibility	-.05	.06	.17	-.07	-.17*	-.26**	.08	.09	.19*	.16	.13
37. Initiative	.10	.31***	.34***	.06	.20*	-.04	.20*	.27**	.31***	.33***	.31***
38. Social Insight	.10	.11	.13	.08	-.01	-.20*	.35***	.24**	.18*	.11	.24**
39. Conflict Resolution	-.04	.06	.16	.03	.03	-.35***	.26**	.20*	.26**	.15	.16
40. Personal Mastery	.10	.08	.26**	.25**	.22**	-.24**	.12	.12	.13	.10	.15
41. Determination	.04	.15	.19*	.22**	.13	-.26**	.27**	.20*	.18*	.05	.12
42. Desire to Learn	.11	-.04	.14	.09	.15	-.16*	-.01	-.01	-.01	.05	.11
43. Mastery Goals	.07	.12	.31***	.30***	.24**	-.18*	.07	.14	.17	.13	.14
44. Competitive Excellence	.08	.06	-.03	-.05	-.16*	.16	.02	-.03	-.13	-.10	.21**
45. Other Referenced Goals	.12	.12	-.03	-.13	-.10	.27**	-.02	-.07	-.12	-.09	.17*
46. Competition Seeking	.02	-.02	-.03	.04	-.17	.00	.05	.01	-.11	-.08	.19*
47. Motivation Anxiety	.01	-.05	.00	.08	.11	.28***	-.18*	-.09	-.16	-.12	-.12

(table continues)

Table S (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11
48. Worry	.00	.00	.01	.12	.12	.26**	-.20*	-.10	-.18*	-.10	-.15
49. Emotionality	.03	-.07	-.01	.07	.08	.19*	-.18*	-.06	-.13	-.08	-.02
50. Evaluation Apprehension	.00	-.05	.01	.03	.09	.27**	-.09	-.06	-.10	-.13	-.15
51. Failure Avoidance-Scale	-.03	-.06	-.15	-.16*	.06	.39***	-.26**	-.22**	-.29***	-.16	-.10
52. Hesitation	.01	.08	.15	.00	-.10	-.15	.17	.05	.14	.14	.13
53. Preoccupation	.02	.05	.04	-.07	-.21*	-.28**	.23**	.03	.16	.03	.02
54. Volatility	.06	-.04	.12	-.08	.00	-.26**	.13	.10	.08	.13	.10
55. Job Satisfaction	.17*	.13	.26**	.14	.10	-.14	.22**	.21*	.25**	.37***	.12
56. Military Values	.09	.29**	.54***	.31***	.22**	.13	.24**	.42***	.36***	.38***	.14
57. Affective Commitment	.28**	.25**	.40***	.20*	.08	.01	.28**	.19*	.21*	.33***	.14

(table continues)

Table S (continued)

Variable	12	13	14	15	16
12. SJT: Showing Initiative	1.00				
13. Self-reg: Showing Initiative T1	.18	1.00			
14. Self-reg: Showing Initiative T2	.20*	.70***	1.00		
15. Self-reg: Showing Initiative T3	.15	.64***	.67***	1.00	
16. Self-reg: Showing Initiative T4	.15	.63***	.61***	.60***	1.00
17. Wonderlic Personnel Test	.18*	.14	.00	.06	.05
18. Big 5: Emotional Stability	.22*	.39***	.41***	.34**	.32**
19. Big 5: Extraversion	.23**	.52***	.38***	.26**	.37***
20. Big 5: Agreeableness	.19*	.21*	.26**	.31**	.11
21. Big 5: Conscientiousness	.25**	.49***	.40***	.37***	.37***
22. Big 5: Intellect	.23**	.36***	.35***	.38***	.24*
23. Anxiety	-.22**	-.43***	-.40***	-.37**	-.29**
24. Anger	-.16	-.26**	-.31**	-.23*	-.27**
25. Friendliness	.20*	.51***	.40***	.25*	.39**
26. Gregariousness	.17*	.33***	.19	.13	.17
27. Assertiveness	.23**	.49***	.38***	.30**	.41***
28. Trust	.19*	.35***	.29**	.24*	.15
29. Cooperation	.13	-.01	.15	.30**	.03
30. Self-Efficacy	.26**	.49***	.40***	.32**	.40***
31. Dutifulness	.28**	.32***	.29**	.30**	.20*
32. Cautiousness	.13	.11	.26**	.37***	.18
33. Dependability	.11	.42***	.36***	.35**	.36***
34. Hope/Optimism	.21*	.52***	.42***	.38***	.44***

(table continues)

Table S (continued)

Variable	12	13	14	15	16
35. Valor/Bravery/Courage	.19*	.36***	.31**	.35**	.39***
36. Situational Flexibility	.14	.45***	.34**	.34**	.35***
37. Initiative	.16	.36***	.23*	.19	.24*
38. Social Insight	.29**	.40***	.30**	.45***	.40***
39. Conflict Resolution	.29**	.32**	.40***	.35**	.37***
40. Personal Mastery	.06	.33***	.25*	.19	.23*
41. Determination	.03	.38***	.34**	.33**	.36***
42. Desire to Learn	.07	.20*	.10	.04	.06
43. Mastery Goals	.03	.27**	.20*	.15	.21*
44. Competitive Excellence	-.01	.03	-.19	-.13	-.06
45. Other Referenced Goals	-.05	-.12	-.33**	-.25*	-.22*
46. Competition Seeking	.02	.17	.00	.02	.10
47. Motivation Anxiety	-.21**	-.39***	-.45***	-.38***	-.37***
48. Worry	-.22**	-.39***	-.43***	-.36**	-.41***
49. Emotionality	-.18*	-.33***	-.44***	-.41***	-.31**
50. Evaluation Apprehension	-.14	-.31**	-.33**	-.23*	-.26*
51. Failure Avoidance- scale	-.26**	-.41***	-.41***	-.40***	-.40***
52. Hesitation	.14	.38***	.35***	.21	.25*
53. Preoccupation	.16	.36***	.43***	.43***	.41***
54. Volatility	.18*	.09	.15	.27*	.13
55. Job Satisfaction	.31***	.30**	.29**	.16	.09
56. Military Values	.08	.23*	.20*	.12	.00
57. Affective Commitment	.08	.25**	.30**	.13	.04

Note. Pairwise deletion of missing cases. *Ns* range from 85 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix T

Correlations Between Variables Relevant to Adapting to Changing or Uncertain Situations

Table T

Correlations Between Variables Relevant to Adapting to Changing or Uncertain Situations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Perf: Adaptive Performance	1.00												
2. Experience-Adapting	.15	1.00											
3. Interest in Adapting	.03	.38***	1.00										
4. Adapting-Expectancy	.20*	.37***	.37***	1.00									
5. Adapting-Efficacy	.08	.54***	.37***	.56***	1.00								
6. Adapting-Commitment	.03	.56***	.42***	.49***	.76***	1.00							
7. Habits-Adapting	-.01	.24**	.35***	.20*	.47***	.37***	1.00						
8. Behavior: Adapting	.08	.21*	.07	.03	.13	.14	.08	1.00					
9. SJT: Adapting	.17*	.24**	.05	.20*	.35***	.40***	.18*	.13	1.00				
10. Self-reg: Adapting T1	.17	.31**	.37***	.34***	.27**	.33***	.28**	.08	.31**	1.00			
11. Self-reg: Adapting T2	.10	.34**	.32**	.25*	.24*	.30**	.30**	.12	.23*	.76***	1.00		
12. Self-reg: Adapting T3	.19	.42***	.29**	.33**	.40***	.40***	.17	.15	.38***	.71***	.74***	1.00	
13. Self-reg: Adapting T4	.15	.30**	.34**	.31**	.32**	.38***	.23*	.18*	.33**	.72***	.73***	.69***	1.00
14. Wonderlic Personnel Test	.11	.10	-.04	.08	.10	.11	-.09	.09	.23**	.10	-.05	.09	.03
15. Big 5: Emotional Stability	.19*	.06	.11	.20*	.09	.12	.21*	.02	.17*	.43***	.49***	.32**	.44***
16. Big 5: Extraversion	.12	.22*	.30***	.23**	.29**	.33***	.27**	.03	.12	.40***	.35***	.32**	.48***
17. Big 5: Agreeableness	.18*	.14	.11	.16	.15	.27**	.06	.12	.03	.20*	.26**	.32**	.32**
18. Big 5: Conscientiousness	.09	.31***	.34***	.36**	.46***	.47***	.36***	-.02	.21*	.41***	.38***	.38***	.41***
19. Big 5: Intellect	.18*	.29**	.27**	.27**	.31***	.37***	.25**	.11	.35***	.43***	.36***	.42***	.39***
20. Anxiety	-.18*	-.11	-.14	-.20*	-.08	-.11	-.25**	-.02	-.27**	-.46***	-.47***	-.28**	-.42***
21. Anger	-.15	.00	-.06	-.16	-.08	-.11	-.12	-.02	-.04	-.30**	-.39***	-.28**	-.34***
22. Friendliness	.09	.20*	.28**	.17*	.27**	.32***	.20*	.05	.10	.34***	.37***	.36**	.45***
23. Gregariousness	.07	.13	.19*	.15	.12	.21*	.24**	.00	.01	.26**	.20*	.09	.32**

(table continues)

Table T (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
24. Assertiveness	.16	.24**	.30***	.28**	.37***	.33***	.27**	.04	.21*	.44***	.32**	.39***	.48***
25. Trust	.21*	.17*	.19*	.14	.14	.25**	.11	.10	.04	.28**	.28**	.25*	.35**
26. Cooperation	.10	.07	-.02	.14	.12	.22**	-.02	.10	.00	.06	.17	.31**	.19
27. Self-Efficacy	.16	.28**	.36***	.40***	.39***	.34***	.39***	.02	.21*	.48***	.38***	.41***	.40***
28. Dutifulness	.12	.19*	.22**	.35***	.37***	.43***	.26**	.02	.17*	.28**	.24*	.27*	.30**
29. Cautiousness	.12	.15	.12	.24**	.15	.26**	.01	.12	.08	.19**	.27**	.28**	.26*
30. Dependability	-.02	.20*	.24**	.23**	.38***	.35***	.27**	-.02	.17*	.30**	.34**	.35**	.36***
31. Hope/Optimism	.23**	.16	.24**	.29**	.20*	.26**	.17	-.08	.17*	.43***	.38***	.44***	.48***
32. Valor/Bravery/Courage	.00	.24**	.42***	.27**	.24**	.28**	.29**	.03	.21*	.42***	.32**	.40***	.39***
33. Situational Flexibility	-.02	.27**	.31***	.07	.18*	.32***	.22*	.10	.21*	.50***	.35***	.47***	.36***
34. Initiative	.07	.33***	.25**	.15	.25**	.31***	.23**	-.06	.10	.29**	.28**	.20	.27**
35. Social Insight	.22	.16	.11	.27**	.28**	.31***	.22*	.09	.22*	.36***	.38***	.46***	.46***
36. Conflict Resolution	.04	.19*	.22**	.19*	.25**	.34***	.20*	.03	.11	.42***	.46***	.48***	.40***
37. MTQ: Personal Mastery	.07	.11	.31***	.06	.07	.09	.13	-.03	.03	.27**	.33**	.23*	.26**
38. MTQ: Determination	.08	.19*	.21*	.14	.10	.11	.08	.02	.10	.41***	.46***	.44***	.43***
39. MTQ: Desire to Learn	.05	-.01	.24**	-.01	.00	.03	.09	-.07	-.02	.12	.15	.01	.06
40. MTQ: Mastery Goals	.06	.13	.27**	.04	.09	.11	.13	-.02	.01	.20*	.24*	.19	.21*
41. MTQ: Competitive Excellence	.08	-.05	-.03	.05	-.03	-.14	-.01	-.01	-.04	-.06	-.20*	-.14	-.19
42. MTQ: Other-referenced goals	.07	.00	-.06	.02	-.05	-.12	.01	-.01	-.06	-.24*	-.32**	-.21*	-.31**
43. MTQ: Competition Seeking	.08	-.08	.01	.07	-.01	-.13	-.02	-.01	-.01	.13	-.03	-.02	-.02
44. MTQ: Motivation Anxiety	-.09	-.15	-.04	-.19*	-.10	-.19*	-.15	-.09	-.27**	-.40***	-.48***	-.32**	-.39***
45. MTQ: Worry	-.07	-.11	-.07	-.22**	-.16	-.24**	-.13	-.10	-.32***	-.38***	-.47***	-.33**	-.41***
46. MTQ: Emotionality	-.08	-.13	-.03	-.14	.01	-.11	-.12	-.02	-.24**	-.37***	-.43***	-.28**	-.30**
47. MTQ: Evaluation Apprehension	-.08	-.16	-.01	-.12	-.10	-.14	-.14	-.11	-.13	-.31**	-.39***	-.25*	-.32**

(table continues)

Table T (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
48. MTQ: Failure Avoidance	-.13	-.18*	-.30***	-.22**	-.17*	-.31***	-.16	.03	-.27**	-.52***	-.50***	-.38***	-.45***
49. ACS: Hesitation	.05	.13	.21*	.12	.15	.24**	.19*	.05	.18*	.32***	.44***	.24*	.28**
50. ACS: Preoccupation	.07	.19*	.18*	.17*	.15	.22*	.17	.17*	.26**	.46***	.47***	.44***	.48***
51. ACS: Volatility	.06	.15	.06	.06	.12	.15	.05	.16	.28**	.19	.14	.25*	.17
52. Job Satisfaction	.15	.12	.19*	.21*	.31***	.26**	.30***	.04	.24**	.30**	.25*	.16	.21*
53. Military Values	.00	.31***	.50***	.27**	.37***	.31***	.27**	.09	-.06	.20*	.12	.14	.09
54. Affective Commitment	.20*	.21*	.27**	.27**	.21*	.16	.19*	.06	.00	.23*	.19	.16	.18

Note. Pairwise deletion of missing cases. *N*s range from 85 to 155. * $p < .05$. ** $p < .01$. *** $p < .001$.